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CONTENTS

PAGE

AIR

Bugayev Discusses Current Status of Aeroflot (B.P. Bugayev; VOZDUSHNYY TRANSPORT, 9 Feb 80).....	1
Bugayev Comments on Measures To Improve Air Transport (B.P. Bugayev; EKONOMICHESKAYA GAZETA, Feb 80).....	6
Amortization of Airplane and Helicopter Inventories (Yu. Chudakov; GRAZHDANSKAYA AVIATSIYA, No 2, 1980).....	8
Servicing System for the TU-154 (S. Omel'chenko; VOZDUSHNYY TRANSPORT, 26 Jan 80).....	17
Supersonic Passenger Aircraft Placed in Museum (I. Grigor'yev; VOZDUSHNYY TRANSPORT, 4 Mar 80).....	18
Il-18 Flight to the Antarctic (VOZDUSHNYY TRANSPORT, 12, 19 Feb 80).....	20
Enroute Report Report From Antarctic	
New Air Routes From Riga Being Opened (I. Nesterenko; VOZDUSHNYY TRANSPORT, 26 Jan 80).....	23

MOTOR VEHICLES

Road-Building Statistics for Kazakh SSR (L. Goncharov; KAZAKHSTANSKAYA PRAVDA, 1 Jan 80).....	24
KamAZ Production of Heavy Trucks Growing (EKONOMICHESKAYA GAZETA, Jan 80).....	28

CONTENTS (Continued)	Page
Widely Used V-2 Diesel Engine has Long History (Yu. Bakurevich; ZA RULEM, Jan 80).....	30
Latvian SSR Accident Statistics for 1979 (SOVETSKAYA LATVIYA, 12 Jan 80).....	31
RAILROAD	
Current Performance Figures for Ukrainian Rail Systems, 1980 Plans (N.S. Konarev; RABOCHAYA GAZETA, 26 Feb 80).....	33
Failings of Southern Railroad System Described (N. Gubenko; EKONOMICHESKAYA GAZETA, Feb 80).....	37
Institutions of Higher Learning Provide Expertise for BAM (V.N. Vorob'yev; VESTNIK VYSSHEY SHKOLY, Jul 79).....	39
OCEAN AND RIVER	
Foreign Currency Expenditures of Ships (I. Levin; MORSKOY FLOT, No 1, 1980).....	45
Kazakh SSR River Fleet's 1980 Goals (VODNIY TRANSPORT, 12 Feb 80).....	49
Overview of Siberia's River Transport System (P. Drachev, L. Levitskiy; IZVESTIYA, 18 Jan 80).....	51
Development of River Transport in Moldavian SSR (I. Mostovoy; SOVETSKAYA MOLDAVIYA, 12 Jan 80).....	56
Ukrainian SSR River Transport Examined (E. Moskvina, A. Davidov; VODNIY TRANSPORT, 28 Feb 80)...	60
Statistics on the CEMA Transport Fleet (MORSKOY FLOT, No 1, 1980).....	64
River Fleet Transports Siberia's Oil and Gas (VODNIY TRANSPORT, 4 Mar 80).....	71
Construction of a Second Lighter Carrier (MORSKOY FLOT, No 1, 1980).....	74
A New Series of Shallow-Draft Tankers (B. Sushkov, V. Sinitskiy; MORSKOY FLOT, No 1, 1980)....	76

AIR

BUGAYEV DISCUSSES CURRENT STATUS OF AEROFLOT

Moscow VOZDUSHNYY TRANSPORT in Russian 9 Feb 80 pp 1, 2

[Address by USSR Minister of Civil Aviation B. P. Bugayev at ceremonial meeting to mark Aeroflot Day]

[Excerpt] The dynamism of development also is characteristic of civil aviation in the 10th Five-Year Plan. Passenger turnover has increased by more than 23 percent. The value of fixed production capital in the sector reached 12 billion rubles. But it is not only a quantitative matter. Over the past 4 years production capital has been updated qualitatively, including its principal component--the fleet of airplanes and helicopters. About two-thirds of transport operations were performed by Il-62, Tu-154 and Tu-134 aircraft in 1979.

Civil aviation is being intensively developed in the regions of the North, Siberia and the Far East. Nearly half of all aviation operations in the national economy last year were carried out in Siberia, Krasnoyarskiy Kray, the Yakutskaya ASSR and the Far East, and one-fourth of all operations were conducted in Tyumen', where oil and gas deposits are being developed with the assistance of aviation.

The volume of operations has increased significantly. About 400 million passengers have been carried since the beginning of the five-year plan. Now as many passengers are carried in 1 year as during the entire Sixth Five-Year Plan. The 1979 plan, in all basic indicators and most accounting indicators, was fulfilled ahead of schedule.

Aviators have proved their value in an appropriate manner in the nationwide struggle for grain, cotton, and other agricultural products. Large-scale agricultural operations have been carried out. In June and July last year, for example, 900 An-2 aircraft were operating over the fields of Kazakhstan, where they performed airborne chemical treatment over an area of 13.5 million hectares in the best agrotechnical periods of time. In Uzbekistan and other cotton-growing republics, 1,250 aircraft were concentrated, carrying out defoliation of cotton plants on time and with high quality.

In this way, in accordance with the decisions of the 25th party congress, the basic trends in the development of civil aviation in the 10th Five-Year Plan have been governed by solution of the principal task--more complete and timely satisfaction of the requirements of the national economy and the people of the country.

A historic event in the history of Aeroflot was the message of greetings from Comrade Leonid Il'ich Brezhnev to civil aviation workers in connection with the fulfillment ahead of schedule of planned targets for 4 years of the five-year plan for utilization of aviation in the national economy. It gave a high evaluation of civil aviation, which is playing a larger and larger role in the country's economy. This message of greetings is a great honor and trust, and justifying it by practical deeds and selfless labor is our vital mission!

I would like to mention particularly the great state and political significance of our international air services. Aeroflot aircraft regularly fly to 109 cities in 84 countries.

In developing international air routes, Aeroflot is taking an active part in the Soviet Union's fulfillment of its international duty to render assistance to the peoples of countries in the revolutionary and liberation movement.

It was thus when an air bridge was built between Moscow and Havana during the American economic blockade of the Island of Freedom. It was thus quite recently when Aeroflot aircraft transferred thousands of tons of foodstuffs from the Socialist Republic of Vietnam to the People's Republic of Kampuchea, which needed them urgently.

International air links are being developed under difficult circumstances which are becoming more sensitive in a number of regions of the world. Our aviators are internationalists with a sense of high responsibility and civic duty, and in the future they will be carrying out the--frankly speaking--difficult tasks with which they have been entrusted. They always will be ardent patriots and consistent internationalists, active proponents of the socialist way of life and truth about the Land of the Soviets!

Comrades! The November Plenum of the CPSU Central Committee, after sizing up the results of the work of the national economy over 4 years, pointed out problems whose solution cannot be put off. They include improvement in the work of transport, and primarily rail transport.

But we aviation workers also must utilize resources to the maximum extent to improve the operations of air transport and thereby contribute to improvement of the entire transport system of the country. In fact, air transport is its most mobile part.

The role of air transport in a unified transportation system has increased significantly in our time. Aeroflot's share of the country's total passenger turnover in intercity service amounts to about 30 percent. Civil aviation is the basic form of transport on long-distance main routes. Aviation provides rail transport with the opportunity to increase freight turnover. It has been estimated, for example, that a billion passenger-kilometers in air transport is equal to the dispatch of a thousand passenger trains. Their release, in turn, makes it possible to dispatch twice as many freight trains.

Thus, increasing the number of air passengers is our most important task. For the country's economy it also is important to increase the shipment by air transport of urgent national economic freight, which is equivalent to turning out additional production.

Comrades! Conforming to the immutable principle of our party--not to flatter ourselves with our progress and to see unresolved problems and shortcomings, it should be said that they also exist in civil aviation. Available resources and opportunities to achieve better end results still are not being fully utilized. We are continuously taking steps to improve work quality and the standard of service to passengers, but everything still has not been done here, either.

The first work-month in the final year of the five-year plan has ended. In conformity with the state plan, we must achieve passenger turnover of 159 billion passenger-kilometers and transport 103 million passengers and about 3 million tons of urgent national economic freight and mail this year.

The role of Moscow aviation enterprises in carrying out this mission is great. Their share of the annual passenger turnover in the sector is 20 percent. Last year 28 million passengers were accommodated by Moscow's airports.

All air routes in the country lead to Moscow. Here 70 percent of the Il-62 fleet, Aeroflot's flagships, have been concentrated. Our new aviation equipment receives a start in life here. Moscow aviators are entrusted with a high responsibility in connection with the Olympic Games. They must become a model of work in air transport. This also will be their contribution to fulfillment of the national mission--turning Moscow into a model communist city!

There is much important and responsible work ahead. On the whole, we must exceed the targets for the year in the sector. With redoubled energy we must put into practice the party's course for improving efficiency and work quality. Every possible savings in fuel is a state mission. It is necessary to struggle for an increase in labor productivity and acceleration of scientific and technical progress. This year we will

begin passenger flights in Il-86 and Yak-42 aircraft. Their introduction will make it possible to improve work efficiency, flight regularity and the standard of passenger service.

The pulse of the economy and the smoothness of operation of civil aviation, as well as of the entire country, is determined by practical work to carry out the decree of the CPSU Central Committee and the USSR Council of Ministers on improving the economic mechanism and the decree "On further reinforcing labor discipline and reducing personnel turnover in the national economy." We consider this work as one of the main directions for putting the party's economic and social policy into practice.

Comrades! In the final analysis, the fate of plans is determined by the people and their enthusiasm. The high intensity of labor and political activity by aviation workers and their selfless labor for the good of the Motherland is a distinctive feature of civil aviation today.

Many collectives of the sector's aviation enterprises, the leading enterprises in Moscow, for example, have come forward with a patriotic initiative--to make 19 April a communist subbotnik in honor of Lenin's anniversary. Thus the workers of Vnukovo Production Association have pledged to achieve the highest productivity and handle 200 flights for the subbotnik. It was decided to make all flights 19 April with fuel that has been saved, and to transfer the money earned to five-year plan assets.

Aviators in Arkhangel'sk, Krasnoyarsk and Minsk and other aviators also have come forward with a similar initiative. It has now been supported by collectives of many territorial administrations and associations.

The other day, at a conference of Aeroflot management and outstanding production workers, socialist pledges by the workers of civil aviation were made for the concluding year of the five-year plan. One of the pledges calls for giving the annual plan an additional 1 billion passenger-kilometers, including 200 million for the 110th anniversary of V. I. Lenin's birth.

We are pleased that in the current five-year plan about 4,000 aviation workers have been awarded orders and medals of the USSR, and that six aviators were honored with the high rank of Hero of Socialist Labor, including helicopter commander Yu. Yuzhakov in 1979. The chief of the Kazakh Administration, Hero of Socialist Labor N. Kuznetsov, was awarded the Order of Lenin and the second Hammer and Sickle medal. We also are proud that last year pilots M. Gurzhiy, G. Mal'tsev and G. Tskhovrebov and chief of a ministry administration T. Anodina became winners of the USSR State Prize, and that pilots M. Zakharov and V. Chukhray and aviation technicians V. Alekhiy and shift chief A. Ivanov became winners of the Leninist Komsomol Prize. And today, from the bottom of my heart I

want to say: honor and glory to the heroes of labor, those on the right flank of the Five-Year Plan!

A characteristic of aviators in our time also is a high sense of duty. In peacetime as well, they accomplish feats by risking their lives and demonstrate high moral, political and volitional qualities.

The name of flight attendant and Komsomol Nadezhda Kurchenko, who died from a thug's bullet while protecting the passengers, is well known to the entire country. She was posthumously awarded the Order of the Red Banner. Flight mechanic and communist Vikentiy Gryaznov, who died under the same circumstances, was awarded the rank of Hero of the Soviet Union posthumously. For demonstrated courage and heroism in carrying out their official duty, crew commanders Ivan Kashin and Vyacheslav Yanchenko were awarded the high rank of Hero of the Soviet Union.

Their feats are dramatic testimony to the continuity of the generations of aviators and their glorious combat and labor traditions!

Soon it will be a year since the day that the CPSU Central Committee decree "On further improving ideological and political education work" was adopted. A number of important measures have been taken in civil aviation which have been directed at implementing this programmed, all-party document.

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CSO: 1829

AIR

BUGAYEV COMMENTS ON MEASURES TO IMPROVE AIR TRANSPORT

Moscow EKONOMICHESKAYA GAZETA in Russian No 6, Feb 80 p 2

[Article by USSR Minister of Civil Aviation B.P. Bugayev: "Put the Work of Aeroflot on a Higher Level"; for related article see JPRS 74844 dated 31 December 1979 of USSR REPORT: TRADE AND SERVICES, No 1218, pp 70-77]

Text The Ministry of Civil Aviation, having examined the VOZDUSHNYY TRANSPORT review published in the weekly's issue No 47 of 1979, reports on the measures being taken to eliminate shortcomings existing in the work.

Flight regularity has been incorporated in the basic work indicators of aviation enterprises. A new regulation on the full assurance of regularity in the movement of aircraft by services of aviation enterprises has been worked out. Operating schedules for readying aircraft for departure have been introduced. To improve operational management by services, central control towers have been reorganized at airports and production and traffic control services have been organized in administrations and republic production associations.

Important work has been carried out to further reinforce the material and technical base of airports. A large number of mechanization facilities have been assigned to airports in the current five-year plan to improve loading and unloading operations and passenger services. A complex of special mechanization facilities has been introduced for container shipment of cargo on Il-76T and An-12 aircraft. Thirty-two commercial warehouses of varying capacity have been built, and more than 20 cargo docks and a large number of loading ramps have been set up at airports. Provision of airports with radio facilities to permit landings and takeoffs under instrument conditions has been continuing.

With the aim of further improving the standard of passenger service, measures also have been taken to expand the central administration of the network of booths and agencies for ticket sales. An important role in improving passenger services is being played by introduction of the method of defect-free work in aviation enterprise services and by the work of public inspectors.

The Ministry of Civil Aviation is devoting a great deal of attention to the problems of improving effectiveness in the use of aviation in operations to service sectors of the national economy. Maximum satisfaction of the requests of ministries and departments is provided for in these objectives. Plans for the use of helicopters and schedules for their operation are being drawn up jointly with customers, and control towers are being established. Operations utilizing the helicopter fleet are in wide use on the country's territory.

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CSO: 1829

AMORTIZATION OF AIRPLANE AND HELICOPTER INVENTORIES

Moscow GRAZHDANSKAYA AVIATSIYA in Russian No 2, 1980 pp 18-19

[Article by Yu. Chudakov, deputy chief of the Main Economic Planning Administration of the Ministry of Civil Aviation: "Amortization of Airplanes and Helicopters"]

[Text] In the process of manufacturing products as well as in the realization of any kind of transportation operation or another, including civil aviation, the enterprises' fixed production capital gradually loses its value. Said more simply, it becomes obsolete and physically worn out. However, in the process of its productive consumption the value of the fixed capital does not disappear without a trace. Rather, the value is transferred in parts into the newly manufactured product, that is, it goes into the product's cost. Subsequently, as a result of selling the manufactured product, that part of the cost which corresponds to the depreciation of the fixed capital used returns to the enterprise. It acts as a part of the monetary assets--earnings on the sale of production items--and is used for depreciation compensation.

This short introduction makes it easier to imagine just what the amortization of fixed capital is. We understand amortization to be a monetary reimbursement to the enterprise for the depreciation of the assets indicated. The reimbursement is due to a gradual transfer of the value of these assets into the products created during the manufacturing process or into work (services) performed. In order to accumulate monetary assets for the restoration of that which has depreciated, the enterprise withholds a certain amount for its amortization fund. Such withholdings--and this must be particularly emphasized--are essentially not income but are, first and foremost, expenditures which are reflected in the production cost level of the manufactured products. Each enterprise, like the State at large, is interested in reducing these expenditure in every possible way.

Thus, the amortization process presents itself as the unity of the gradual depreciation of the means of labor (a transfer of part of their value to the manufactured product) and the simultaneous formation of a special monetary fund (the so-called amortization fund). This fund is intended for the financing of work to restore the worn-out means of labor in their physical and monetary forms. Consequently, as an economic category, amortization is a necessary prerequisite for the reproduction of fixed capital in its physical form in the case of simple (stable) as well as expanded (developed) reproduction.

Two types of amortization are distinguished: amortization for complete restoration (or, in other words, for renovation) if it is a question of making up entirely for the total value of the fixed capital, and amortization for capital repair when the cost of the capital repair of the fixed assets is transferred to the production costs of the goods or services.

Airplanes, helicopters and aircraft engines are a most important part of civilian aviation's fixed capital. A set allowance is also made for their amortization, the expenditures for which are quite great. In this sector of industry they comprise at present a little less than one third of all expenditures.

The value of the fixed capital, including the airplane and helicopter inventory (SVP), is compensated for through the inclusion according to established rates of an amortization allowance in the production costs of aviation transportation and the application of aviation operations in the economy. Up to 1980 these rates were set in rubles per hour of airplane, helicopter and aircraft engine flight time. In addition, provisions were made for a computation of amortization only when flight operations were carried out. The time that the aviation equipment spent on the ground was not reflected in the transport costs. Thus, it turned out that the items of expenditure listed as "amortization of airplane and helicopter inventory" were directly proportional to the number of flight hours. Consequently, the expenditures for each air transport job or PANKh [Passenger Aviation of the National Economy] operation are constant and are not dependent upon airplane or helicopter flight hours.

The existing method of computing the amortization of the airplane and helicopter inventory has not induced the aviation enterprises to increase the flight hours for airplanes and helicopters. A new principle of computing the airplane and helicopter amortization, which was put into practice in civil

aviation on 1 January 1980, is directed first of all at the solution of this problem. It satisfies those requirements advanced by the resolutions of the party and the government on the question of improving planning and the management mechanism. The changes that have been realized also contribute to eliminating certain other shortcomings in the enterprises' economic activity and make it possible for them to more correctly evaluate the profitability in utilizing this or that aircraft.

Let us, then, try to sort out and size up what has brought about this essentially new and, as we will see in the future, very important decision of the central planning agencies on questions of amortization in civil aviation. The main reason lies in the fact that the previous procedure for computing amortization of the airplane and helicopter inventory as it depended upon flight hours had a number of considerable drawbacks that had an extremely negative effect on production efficiency in the industry.

As has already been stated, the old method did not at all stimulate improvement of inventory utilization with regard to flight hours. It turned out that the higher the enterprise's flight hours, the more directly proportional were the items of expenditure for the "amortization of airplane and helicopter inventories." In other words, in accordance with the indicated item of expenditure and independent of the flight hours, the production cost for a unit of transportation work or for a unit of passenger aviation was a constant.

Furthermore, it is well known that all fixed capital, including airplane and helicopter inventories, is subject to physical wear as well as to obsolescence--the latter to an even greater degree. However, the old principle of computing the amortization totally ignored obsolescence. Amortization was not computed during the airplanes' and helicopters' down-time, nor during servicing or repair periods.

All in all, during a considerable portion of calendar time the obsolescence of aviation equipment was not taken into account. As a result, the recovery of the initial cost of the airplanes, helicopters and aircraft engines and, naturally, the accumulation of an amortization fund for these ends was drawn out over unacceptably long periods of time. For example, according to data for 1977-1978, the period of the total recovery of the cost to Aeroflot of its airplane and helicopter fleet averaged 16 years. There were also cases in which the aviation equipment was written off as if it were an exhausted fixed resource, with an incomplete recovery of the initial cost. Such a case must be considered absolutely intolerable.

Another serious shortcoming in the established practice of computing the amortization of the airplane and helicopter inventory was the insufficient control on the part of the enterprises over the rational quantities of airplanes, helicopters and, in particular, aircraft engines that were at their disposal. Since the inventory amortization expenditures depended only upon the flight hours, there was practically nothing that limited the orders for engines. This led to a situation in which the number of engines on hand at particular enterprises in our sector exceeded the necessary requirements several times over.

We will now put an end to all of this. Since the beginning of 1980 the Ministry of Civil Aviation has gone over to a balance-sheet method of computing the amortization of airplane, helicopter and aircraft engine inventories. What is the essence of such a method? In the first place, the amortization rates are established as a percentage of the balance value of the fixed capital, as a rule, to be calculated annually. Secondly, the amortization is computed for all the fixed capital on the enterprise's balance sheet, independent of its technical status, location or degree of participation in the production process. This means that it does not matter whether a given airplane (helicopter) flies or not--its amortization is computed none the less.

In accordance with the USSR Gosplan and the USSR Ministry of Finance the Ministry of Civil Aviation has approved depreciation deduction rates for the total recovery (renovation) of airplanes, helicopters and aircraft engines within the following scales: 8 percent of the balance-sheet value annually for airplane and helicopter airframes and 10 percent of the balance-sheet value annually for aircraft engines of all types. These rates were established on the basis of an analysis of the practical service life of the airplane and helicopter fleet, the current and projected aviation equipment resources, similar data on foreign aviation transport, studies from civil aviation's scientific research organizations and by taking into account the requirements of scientific-technical progress and the obsolescence of the airplane and helicopter inventory. On this scientific-technical basis the optimum common service periods for the equipment were also selected: the service life for all types of airplane and helicopter airframes is 12.5 years and 10 years for all types of aircraft engines. Thus, according to the rates indicated above, the initial cost of the airframes and engines should be recovered within their established service life, independent of the hours they accumulate.

One might ask why common service periods and common depreciation allowance rates were adopted for all types of airplane and helicopter inventories. Here one must bear in mind that this is not the actual service life of the fixed capital but rather the calculated amortization service life, during the course of which the initial cost of the aircraft must be recovered. And what does it mean to recover the initial cost of the assets? It means settling completely with the State for the fixed capital and having the opportunity to acquire new assets, in this case new aircraft. From the standpoint of technical progress the periods of airplane and helicopter fleet replacement should be common for all types of aircraft--from the main-line airliners to the airplanes on local airlines.

Of no small importance is the fact that the common allowance rates for all airplane and helicopter airframes and for all aircraft engines make it possible to considerably simplify the projection and computation of the amortization. In order to do this, one need only determine the average annual cost of the airplane and helicopter inventory for the projected period. It is likewise simple to carry out the actual computation of the amortization for renovation of airplanes, helicopters and aircraft engines.

The overall application of the all-union "Statute of Procedures for the Planning, Computation and Application of Amortization Allowances in the Economy" for airplanes, helicopters and aircraft engines is essentially new in the actual computation of amortization for the total recovery (renovation) of airplane and helicopter inventories. It will be worthwhile to direct our attention to the interpretation of its separate points as they relate to airplane and helicopter fleets.

In one of the Statute's points, for example, it is stated that: "For equipment and transportation assets that are in stock (in the warehouse reserve) and are counted on the balance sheet of the enterprise in question, only the amortization for total recovery is computed." This does not require special explanation for airplanes and helicopters. As far as the engines are concerned, it is necessary to note that the amortization computation for all the engines carried on the enterprise's balance sheet does not depend upon whether they are in an aircraft, undergoing repairs or in the warehouse.

That which was stated above would seem to sum up another of the Statute's points, in which it is clearly explained that "Amortization computation does not cease during repair nor during down-time of the fixed capital." To this must be added the fact that, applied to airplanes, helicopters and aircraft engines, it is a question of amortization for total recovery (renovation) only.

A certain degree of interest is presented by a point in the Statute, in accordance to which "the amortization allowance for total and partial recovery of the fixed capital is carried out during the course of the actual service life of the assets." Its concept is likewise directed at improving the utilization of fixed capital. We will explain this with a conventional example.

Let us assume that two enterprises are using the same type of aircraft with a cost of four million rubles. The aircraft has a fixed useful commercial life equal to 35,000 hours. One enterprise logs 2,500 hours of flight time annually, the other 2,000 hours. Calculations show that at the first enterprise the aircraft will "live out" 14 years (35,000 hours divided by 2,500 hours), while the figure is 17.5 years for the second enterprise. Over this period of amortization for total recovery (for the enterprise--expenditures) the computations will be, respectively: 4 million rubles times 8 percent divided by 100 percent times 14 years = 4.48 million rubles for the first enterprise and 5.60 million rubles for the second. With identical yearly amortizations of 320,000 rubles, the expenditures for each hour of flight time amount to 128 rubles (320,000 rubles divided by 2,500 hours) at one enterprise and 160 rubles at the second. It follows that, in the case of identically productive flights, the item expenditures under "airplane and helicopter inventory amortization" at the second enterprise and, consequently, the production costs for one ton/kilometer (passenger/kilometer) will be 25 percent higher. It means that from now on the higher the number of flight hours, the proportionately lower the expenditures will be for amortization of the airplane and helicopter inventory per productive hour or per unit of aviation work.

It can also be seen from our example that, for the total service life of the aircraft, both firms computed an amortization for recovery of the airframe that was somewhat greater than its initial cost: more than 0.48 million rubles greater at the first enterprise and 1.6 million rubles greater at the second. This has come about because both firms have not provided for that level of flight hours which was established when the amortization rates were calculated. It is easy to calculate that the flight time which we would call conventionally optimum should be equal to 2,800 hours annually (35,000 hours divided by 12.5 years, that is, the amortized service life of the airplane, corresponding to an 8 percent amortization rate). It is, in fact, precisely this flying time that insures a 100 percent recovery of the initial cost of the airframe. Apparently, there is no sense in increasing these expenditures. It is more expedient to consider improving the asset utilization by increasing the number of flying hours.

Since the amortized service life adopted in the calculation of amortization rates for recovery is a constant (12.5 years for airframes and 10 years for aircraft engines), it is not difficult to calculate and then control during the operational process the optimum annual levels of flight time for airplanes, helicopters and aircraft engines. It then becomes possible to always know how much the actual utilization of the aircraft equipment corresponds to the optimum level and whether there is an overexpenditure for amortization or not. For example, with an airframe possessing a commercial (designed) service life of 30,000 hours, amortized for 12.5 years, the optimum level of annual flight time amounts to 2,400 hours (30,000 divided by 12.5); with 35,000 hours the level is 2,800 hours, etc. If the actual annual flight time of the airplane and helicopter fleet is less than the optimum level, the formation of extra amortization expenditures is unavoidable, as is an overestimate of the production costs of air transportation and passenger aviation operations. In a word, there will be a decrease in the efficiency of production. In a similar manner, one may calculate the optimum level of flying hours for aircraft engines. According to this level it is not difficult to determine the minimum number of aircraft engines necessary to insure a given number of flight hours.

There is still one more circumstance associated with the balance sheet method of computing aircraft engine amortization that will contribute to no small degree to increasing the efficiency of production. There are many ways in which the enterprises may plan expenditures toward these ends. The first way is by planning the expenditures for the actual number of aircraft engines on hand. The second way, which is more efficient, is by planning expenditures for their normative quantity. For the second variant, however, it is necessary to establish and confirm the corresponding quotas and adopt measures for the sale of surplus aviation equipment. At the present time work is being conducted at Aeroflot on such quotas. The completion of this work will make it possible to improve the status of the fixed capital at aviation enterprises.

In connection with the transition to the balance-sheet method of computing amortization for the recovery of the airplane and helicopter inventory costs, it has become necessary to introduce certain refinements in the evaluation of the profitability of utilizing airplanes and helicopters. We will recall that up until 1980 the profitability of utilizing airplanes and helicopters did not depend in practice upon the annual level of flight time. It is now another matter.

We have already explained that the hourly amortization expenditures may fluctuate within rather considerable limits, depending upon the level of flight hours. Let us examine, for example, an annual amortization fund of 600,000 rubles calculated according to the new rates. Depending upon the annual level of flight time, the hourly expenditures for this entry will be equal to: 300 rubles per hour for an annual flight time of 2,000 hours, 240 rubles for 2,500 hours and 200 rubles for 3,000.

Consequently, it turns out that the profitability of one and the same aircraft may be significantly higher or lower (plus or minus 100 rubles) in various cases. For some types of aircraft this may be quite enough to turn profitable aircraft into unprofitable ones and vice versa. Thus, it becomes obvious that today we may not state unequivocally whether an aircraft is profitable or not. One must consider the level of flight time achieved as a necessary condition for confirming or denying it.

There is one more natural question: what do we do if we reach a level of flying time that is higher than the optimum level? Let us take, for example, a prescribed (commercial) service life of an airframe of 35,000 hours. This corresponds to an optimum flying time of 2,800 hours. It is possible for one, however, to fly 3,000 hours. In this case one must bear in mind the following: In the first place, one must not forget that a flying time of 3,000 hours per year must be provided for during the given aircraft's entire period of utilization. Experience shows, however, that in the first 2-3 years an enterprise is not able to reach such a level of flying time. Moreover, the flying time for an aircraft, as a rule, decreases by the end of its period of use. Consequently, under today's conditions it is rather difficult to insure a level of flying time that exceeds the normative level on the average over the aircraft's entire period of utilization. In the second place, if this happens anyway with certain airplanes (bearing in mind not the types of aircraft but their numbers), then, apparently, it will be necessary to continue computing the renovation amortization up to the total recovery of the initial cost, as is done, for example, for oil and gas wells that are not yet amortized.

Thus, an important condition for increasing the efficiency of any kind of production, including civil aviation, is constant

improvement in the utilization of the fixed production capital. For Aeroflot, the improvement in the utilization of the airplane and helicopter inventory--the most active part of its fixed production capital--has great significance. At the same time, any further significant increase in flight productivity becomes more and more difficult with each year. The leading enterprises have already achieved maximum figures for this indicator. Our chief future potential is the increase in fleet utilization with respect to the number of flying hours. This, however, does not at all mean that the increase in flying hours must be achieved at any cost, without consideration of aircraft fuel conservation. It is a question of the enterprises, having carried out their assigned missions, striving to use two airplanes where three are now being used, and using three where four are now flying. It is precisely toward this judicious utilization of fixed capital that the workers in civil aviation are being oriented by the resolution of the CPSU Central Committee and the USSR Council of Ministers "On the Strengthening of the Economic Mechanism's Effect on Increasing the Efficiency of Production and the Quality of Work."

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9512

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AIR

SERVICING SYSTEM FOR THE TU-154

Moscow VOZDUSHNYY TRANSPORT in Russian 26 Jan 80 p 3

[Article by correspondent S. Omel'chenko, Irkutsk: "Calculations Turned Over to a Machine"]

Text Irkutsk--This is tiring work--calculating the operating time of the systems of units, taking into account operational changes, and it is painstaking work, requiring attention and concentration. If one has been distracted and permits an error, much time will be lost in searching for it.

Since they introduced the TOS (technical servicing of Tu-154 aircraft) system at the air maintenance base of the Irkutsk Aviation Enterprise, that is, since they entrusted all these calculations to an electronic computer, it has become noticeably easier for record-keeping technicians to work, but the main point is that the quality has been improved.

The transition from manual labor to automation did not take place in a day. A program had to be developed for the EVM, and the work of the record-keeping technicians had to be reorganized in a new way. The first one to be accepted for development of a program was record-keeping technician G. Avdeyeva. She was assisted by engineers from the data-processing and computer center.

N. Voloshina, an engineer, admits: "At first we did not trust the electronics at all. We duplicated all calculations manually. But we discontinued this recently."

Technical maintenance of Tu-154 aircraft with the aid of an automated control system was introduced in Irkutsk in accordance with the experience of the Vnukovo Air Maintenance Base.

A diagnostic laboratory is one of the newest sections; it has not been a year since the day it was organized. Now workers of the air maintenance base are working on use of an automated control system to monitor the work of the diagnostic laboratory.

A program to control the parameters of engine operation is being put together jointly with scientists of the Irkutsk Polytechnical Institute.

AIR

SUPERSONIC PASSENGER AIRCRAFT PLACED IN MUSEUM

Moscow VOZDUSHNIY TRANSPORT in Russian 4 Mar 80 p 4

[Report] by correspondent I. Grigor'yev: "To the Museum Under Its Own Power"]

[Text] Monino, Moskovskaya Oblast—...The sun was already touching the tops of the trees in the rapidly darkening forest when the striking bird with a sharp beak and sweptback wings landed here in Monino.

Since morning the sky on the last day of winter had been flooded with clear blue, but towards evening the sun had become obscured by haze, and those coming to look at this unique landing were wondering--will it fly in or not?...

V. Tikhonenko, deputy director of the Air Forces Museum, told us how they had prepared for the arrival of the Tu-144 supersonic passenger aircraft.

They had worked on the runway for more than a month. A runway over 2 kilometers long had been cleared away so that this giant could land here (the aircraft's landing weight is about 110 tons). The aircraft's first tester, Hero of the Soviet Union E. Yelyan, had examined it. They had made several test approaches in a Tu-134 and had measured the braking distance. Finally, specialists from the OKB [Experimental Design Bureau] imeni A. Tupolev came to the conclusion that the "144" could be landed at Monino.

Nearly all the museum's exhibits had come here under their own power. And it somehow did not befit the winged giant to come here any other way. Here the future exhibit, brought to museum luster in Voronezh, emerged through the web of overcast. It made an approach and left for a second circuit.

"They are approaching from a distance, ranging in," comments Hero of the Soviet Union and Honored Test Pilot of the USSR Yu. Antipov, who is standing next to us.

That is understood. A supersonic passenger aircraft must land on an unpaved runway for the first time. It is not enough to say on an unpaved runway—on ground cleared of snow. World aviation has not seen anything like it yet. The coefficient of friction had to be meticulously calculated. Based on this, the length of the ground run had to be determined, and the fact that the snow can be melted by the sun had to be taken into consideration...

The aircraft once again came into view and approached for a landing. And churning up a spray of snow, the Tu-144 landed and rushed straight toward us, lowering its "beak" and releasing three red and white parachutes to reduce speed.

"They landed with room to spare. In fact, it did not even run out for a kilometer. Well done!" Yu. Antipov said delightedly.

The aircraft turned around and we saw the side number--77106. A tractor hooked up to the front strut of the landing gear and towed it to a place assigned between an An-24 and a Tu-104.

...I held this brief interview with the crew commander, test pilot Gennadiy Voronchenko, standing on the wing of the aircraft. The commander represented the crew: copilot and Honored Test Pilot of the USSR Boris Veremey, test navigator Vitaliy Troshin, radio operator Anatoliy Tararukhin, and chief engineer Yuriy Stoloyarov.

"Of course," G. Voronchenko says, "we were well aware of the complex mission facing our crew—landing a supersonic aircraft on the ground for the first time, although everything had been so well calculated that we did not experience any particular difficulties. The landing went as planned. And the runway also was in good condition—the ground run was 900 meters..."

8936
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AIR

IL-18 FLIGHT TO THE ANTARCTIC

Enroute Report

Moscow VOZDUSHNYY TRANSPORT in Russian 12 Feb 80 p 4

Text On 10 February, Aeroflot's Il-18D aircraft No 74267 took off from Moscow for the Antarctic; after a flight of nearly 16,000 kilometers, it will land at Molodezhnaya Station. This trip will initiate regular flights on the Moscow-Antarctica route. Our correspondent A. Gorokhov reports from on board the airliner:

At 1939 hours, our aircraft landed at the Cairo airport. The landing approach was complicated somewhat by thick cumulus in the airport area. Unusually heavy rain is falling here, although it is generally warm. A tailwind and the direct route made it possible for the crew to bring the aircraft in ahead of the time specified.

Workers from the Aeroflot branch office met the aircraft.

On the eve of the Il-18's arrival, the local newspapers reported the flight of the Soviet airliner headed for the Antarctic.

* * *

At 0247 hours Moscow time on 11 February, the Il-18D aircraft, headed for the Antarctic, landed at Aden, capital of the People's Democratic Republic of Yemen. The aircraft completed the flight from Cairo to Aden, nearly 2,500 kilometers, in 4 hours.

High outside air temperatures and areas of increased turbulence required the crew to apply all their professional skills to avoid disrupting the timetable.

Anatoliy Brizhan', Aeroflot representative at the Aden airport, noted that a good rest for the relief crew which will fly the aircraft to the

Antarctic, as well as the technical preparations needed for the flight, had been provided here.

So now we take leave of Yevgeniy Bunchin's crew, which is replaced by Anatoliy Denisov's crew. Takeoff for Maputo in an hour.

Report from Antarctic

Moscow VOZDUSHNYY TRANSPORT in Russian 19 Feb 80 p 4

[Text] Molodezhnaya Station, 18 Feb--The principal event during the Ministry of Civil Aviation and USSR Goskomgidromet [State Committee for Hydrometeorology and Environmental Control] delegation's stay in Antarctica was the flight to the geographic South Pole. After an arrangement with the American polar research workers who are working at the McMurdo and Amundsen-Scott stations on the matter of an alternate airfield and the homing facilities needed, our Il-18 took off from the snow-and-ice airfield at Molodezhnaya Station and took up a heading to the south. After passing over the preserved Pole of Inaccessibility station, the aircraft appeared at the top of the Earth in a little over 4 hours. Following a momentary trip into the previous day, which was necessary for a turn, the aircraft took up a return heading. Crew commander Anatoliy Denisov noted that no problems had been encountered in the flight. Let us add that the Americans did not communicate with our aircraft and did not provide a bearing from the Amundsen-Scott Station at the South Pole, although they had received detailed information on the flight.

It is noteworthy that one of the Il-18's passengers had already flown over the South Pole--the chief of our air expedition, Hero of the Soviet Union Ye. Tolstikov, had been here in October 1958 in an Il-12 aircraft piloted by Viktor Perov. Naturally, those taking part in the present flight to the pole listened to Ye. Tolstikov's comments with great interest.

In the vicinity of the South Pole, an event took place which will go down in the history of civil aviation. On board the aircraft, the director of the flight, Deputy Minister of Civil Aviation B. Grubiy, presented the certificate of a civil aviation pilot first class to the commander of the Antarctic expedition flight detachment, Ye. Kravchenko. Obviously, Kravchenko thus became the only Aeroflot pilot to receive such an important document under such unusual circumstances.

Here at Molodezhnaya, a meeting was held in which the state commission approved the snow-and-ice airfield with an "excellent" rating. Flight leaders B. Grubiy and Ye. Tolstikov congratulated the construction workers and thanked them for the difficult work that had been accomplished.

A. Nikitin, deputy chief of the GUERAT [expansion unknown] of the Ministry of Civil Aviation, emphasized that this airfield meets practically all necessary requirements. Preparations are now being made for the flight to the Motherland. The weather has deteriorated, it has become warmer, and it has been snowing. The sun is hidden behind heavy overcast.

8936

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AIR

NEW AIR ROUTES FROM RIGA BEING OPENED

Moscow VOZDUSHNYY TRANSPORT in Russian 26 Jan 80 p 1

[Report by I. Nesterenko, chief of the TsAVS [Central Air Service Agency] of the Latvian Republic Production Association: "New Lines Are Being Opened"]

[Text] Riga—The capital of Latvia has been linked by an air bridge with nearly 100 cities in the country. This year another nine routes will be opened, including ones to Gur'yov, Aktyubinsk, Kemerovo, Irkutsk, Zhitomir, and Sumy. The volume of passengers, urgent national economic freight and mail is increasing significantly.

All this imposes a heavy responsibility on the collective of the Central Air Service Agency of the Latvian Republic Production Association.

Agency workers have assumed duties in honor of Aeroflot Day and have pledged to overfulfill the January plan for ticket sales and to attain a high standard of service to customers.

What is being done in this direction at the finish line of the 10th Five-Year Plan? Work is being carried out to introduce an automated system for the sale and reservation of tickets. A third desk for seat assignments has been put into operation, which has speeded up service to air travelers a great deal. Advertising has been updated: 76 billboards have been set up in the republic's cities.

Since 1 January, Tu-154 aircraft have been flying on the Dushanbe-Riga route for the first time.

Shock workers of communist labor are in the front ranks in competition to greet the Aeroflot holiday. They include cashier B. Valyavko, winner of the republic competition for occupational skill; cashiers L. Lebedeva, V. Vitola, and L. Smirnova; and duty staffers A. Bulanova, A. Voytskhovich and R. Yashchenko.

8936
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MOTOR VEHICLE

ROAD-BUILDING STATISTICS FOR KAZAKH SSR

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 1 Jan 80 p 2

[Article by L. Goncharov, Minister of Motor Highways of the Kazakh Soviet Socialist Republic: "The Limits of the Road-Builders. A Minister Replies to a Letter"]

[Text] I am a driver. It lies in the nature of my work that I often carry grain, wood and building materials for rather great distances. For this reason I know the roads both of my own and the neighboring oblasts very well. And this is what must be noted: while you travel on the main routes--between oblast and rayon centers--there are practically no problems, but once you turn onto a country road and drive from sovkhos to sovkhos or to a branch, and on top of that in bad weather, you sometimes suffer so much that you think: should you not give up your profession?

It happens that you hardly make it through a dozen kilometers in half a day, even in a tugboat.

Thus, a gap exists between the development of the large roads and the local ones--between sovkhoses, branches, and small settlements. It happens that the time we, the drivers, have saved on some sections of the itinerary we lose on others. This gives rise to irregularities in the supply of materials and raw materials to farms and different organizations. I would like to find out what measures are being taken and being planned by the road organizations of the republic with respect to the construction of local roads?

S. Slyusarev,
driver of motor column No 2,592 of the Urals
Oblast Automotive Administration.

Every year the subdivisions of the Ministry of Motor Highways of Kazakhstan secure the growth of 3,000 kilometers of roads with hard surface, measure off 4,500 kilometers of subgrade, introduce 4,000 linear meters of bridges and overpasses, plan rugged surface machining for a distance of 5,500 kilometers. During the four years of the five-year-plan, the road-builders of the republic secured a growth of motor highways with hard surface of 10,600 kilometers when the plan called for 9,650 kilometers. The length of roads with black top increased to 6,312 kilometers, which amounts to 104.2 percent of the plan.

Indeed, priority development in the 10th Five-Year-Plan went to the main motor highways--97 percent of the national highways have hard surface, a significant part of them black top and asphalt. All oblast centers, except Shevchenko, are linked by well-constructed roads between each other and Alma-Ata.

But the development of the road network in rural localities has proceeded as intensively during the past 4 years. In 12 oblasts all oblast centers are now connected with well-constructed oblast roads, 92 percent of the rural centers and 78 percent of the central farmsteads of kolkhozes and sovkhoses have been supplied with such routes. In 84 percent of the rayons roads have been built to all settlements, and 36 rayons and 7 oblasts are close to the completion of this work.

In the meantime, while noting the successes that have been achieved during the years of the 10th Five-Year-Plan, we also remember the shortcomings in the road industry of the republic. In particular, if the All-Union and Republic roads in Kazakhstan fully meet the demands of the national economy, for the time being it is impossible to say this about the oblast and local roads.

And, of course, comrade Slyusarev is right: the lack of good roads causes enormous harm to the national economy. It suffices to say that in the roadless sovkhoses and kolkhozes of the republic the share of transportation expenditures in the production cost of agricultural products reaches approximately 40 percent. Frequently the cost of supply exceeds the income from the sale of the products.

All of this, it goes without saying, to a considerable extent is a result of the fact that the road organizations of the republic have not yet been able to secure the fulfillment of a number of important indicators. Thus, for the time being labor productivity is ahead of wages by an insignificant margin, the production cost of the construction of motor highways is decreasing slowly, progressive engineering and technology, economical and dependable building materials are still not everywhere introduced in the industry in the way they should be.

At the same time, it must be noted that not only collectives of our industry take part in the construction, repair and maintenance of local roads.

As far back as April 1969, the Presidium of the Supreme Soviet of the Kazakh Soviet Socialist Republic published the Decree "On the Participation of Kolkhozes, Sovkhozes, Industrial, Transportation, Construction and Other Enterprises and Economic Organizations in the Construction and Repair of Motor Highways". The practical realization of this important document brought about remarkable results. Thus, during the past two years alone, a great deal of work was completed in regard to the linking of all central farmsteads of the kolkhozes and sovkhozes of Karagandinskaya Oblast with the rayon centers through good roads. As result, the losses of grain in transportation were reduced by 1.5 percent, the incomes of the farms increased by a factor of about 1.2, there was an improvement in the utilization of the motor vehicle pool, and the expenditures for their repair decreased by 35 percent. Good roads made it possible, in particular, to manage almost without the involvement of transportation from elsewhere during the gathering of the jubilee harvest in Zeredinskiy Rayon of Kokchetavskaya Oblast, and the means invested in the construction of rural roads in this rayon were repaid during three years of the five-year-plan.

One can cite other examples of a similar kind. And nevertheless, the Presidium of the Supreme Soviet of the republic in June of the past year noted that the material and technical resources of sovkhozes and kolkhozes are not being strongly attracted in some oblasts. There are cases where the directors of kolkhozes, sovkhozes, economic enterprises and organizations try to reduce their participation in the installation and maintenance of the roads to money contributions, and the executive committees of the oblast and local Soviets of People's Deputies do not show the required exactingness in these questions. As a result, during the past 3½ years alone, almost 590 organizations either completely or partly avoided fulfilling the Decree and failed to fulfill road work amounting to 4.5 million rubles.

In particular in Aktyubinskaya, Dzhezkazganskaya, Pavlodarskaya, Semipalatinskaya, and Vostochno-Kazakhstanskaya Oblasts practically not a single kilometer of roads was built by kolkhozes and sovkhozes during the past two years. And the percentage of hard-surface roads is extremely low in Irgizskiy Rayon, Aktyubinskaya Oblast, Kaztalovskiy, Furmanovskiy, Karatobinskiy and Urdinskiy Rayons of Ural'skaya Oblast.

The November (1979) Plenum of the CPSU Central Committee placed great tasks before the work collectives with regard to the final year of the Five-Year Plan. The toilers of our industry, too, are making their contribution to their practical realization.

By the end of the Five-Year Plan we must liquidate the subsoil breaks in the national road network, bring the parameters of the subgrade up to norm, increase the reliability of the roads in the sections of freight traffic density. An important measure for securing the preservation of road surfaces and the improvement of the quality of travel equipment is

the planning of rugged surface machining. Large volumes of work must be carried out at the Pavlodar-Ekibastuzkiy Territorial-Production Complex, where, along with the construction of intra-farm roads, a great deal of organizational work must be carried out within an exceptionally compressed time frame with regard to the expansion of volumes, the increase of rates of speed, the improvement of the quality of the construction of motor highways in the rural locality. We hope that the party and Soviet organs and the economic directors will secure the more active participation of the farms in this cause so as to link a significant part of the central farmsteads of the kolkhozes and sovkhozes with reliable roads already by the end of the Five-Year Plan.

The specific characteristics of road construction work are such that the installation of asphalt concrete and cement surfaces requires a warm season of the year. In order to maintain the rhythmical pace of such operations for the duration of the entire year, precise plans have already been drawn up for the first quarter in regard to the repair of asphalt concrete and cement plants, enterprises for the production of non-metallic mineral construction materials, road-building machines and other technical equipment. During the first months of the year we must intensively procure stone materials and transport them to the construction sites, erect subgrade and build bridges and water drain pipes. The thoroughness of the planning of these measures made it possible for the ministry and its subordinated organizations to raise the level of the execution of construction operations during the past years in the first quarter of the year from 10-12 percent to 17-19 percent of the annual volume.

The workers, engineers, office workers of the road industry of Kazakhstan are working in a Leninist, shock-work fashion on duty in honor of the 10th anniversary of the birthday of V. I. Lenin and the 60th anniversary of the Kazakh Soviet Socialist Republic and the Communist Party of Kazakhstan. In the final year of the Five-Year Plan they are full of resolve to carry out honorably the tasks that are before them and to make a worthy contribution to the national struggle for the realization of the plans of the native Communist party.

8970
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MOTOR VEHICLES

KAMAZ PRODUCTION OF HEAVY TRUCKS GROWING

Moscow ECONOMICHESKAYA GAZETA in Russian No 3, Jan 80 p 1

[Article: "100,000 KamAZ Heavy Trucks in Service Around the Country"]

[Text] In accordance with the decisions of the 25th CPSU Congress the Kama plant complex for production of heavy trucks has been placed in operation during the 10th Five-Year Plan. Over the period of the five-year plan this giant of national industry will supply almost 40 percent of the total increase in truck production. In his greetings to the participants of the construction project L. I. Brezhnev said: "I firmly believe that years will pass, but all Soviet people will remember with pride the feat of labor performed on the Kama River."

The annual output of vehicles of just the first order of the autogiant equals in load-carrying capacity the annual vehicle output of the Minsk, Kremenchug, Ural and Kataisi automotive plants put together. The overall design capacity of KamAZ is 150,000 heavy trucks and 250,000 diesel engines.

The Kama Automotive Plant workers have already provided the economy more than 100,000 vehicles with a total load-carrying capacity of over 1.8 million tons. Engines with a total horsepower of 27.5 million have been produced. Truck production at the Moscow ZIL and Ural automotive plants and the L'vov omnibus plant was begun with diesel engines supplied by the KamAZ plant.

The Kama complex has become the standard-bearer of technical progress in domestic motor-vehicle production. Today, three primary vehicle versions come off the assembly line here--a stake-and-platform truck and a truck-tractor (both with a load-carrying capacity of 16 tons with trailers) and a chassis for 10-ton dump trucks. They all have an axial load of 6 tons which makes possible their use on any road.

The complex includes seven specialized plants located near one another. Over 80 percent of the machines and machine tools operate in the automatic or semiautomatic mode.

Construction of the huge enterprise continues with output capacity increasing. A lovely modern city has arisen next to the group of plants. The population of Naberezhnyye Chelny has increased eleven-fold and reached 315,000. Approximately 4 million square meters of modern housing has been built here. At the same time a major agricultural area located next to the city designed to provide the "autocity" with produce has been created.

In developing mass competition in honor of the 110th anniversary of the birth of V. I. Lenin, the Kama machine-construction workers have set a goal to produce in 1980, 12 percent more vehicles than last year, to speed up the assimilation of production capacity. Marvelous examples of intense work are being shown by the leading brigades of G. F. Pavlov's steel-tempering-foundry workers, Sh. Kh. Khusnutdinov's fitters-assemblers, by socialist competition winners for "Best Worker in a Profession" fitter V. I. Avvakumov, smelting worker V. I. Mal'chukov, fitter-repairman V. M. Zatula and many other production innovators.

9596

CSO: 1829

MOTOR VEHICLES

WIDELY USED V-2 DIESEL ENGINE HAS LONG HISTORY

Moscow ZA RULEM in Russian No 1, Jan 80 p 5

[Article by Colonel-Engineer Yu. Bakurevich: "Anniversary of the V-2"]

[Text] Production of the V-2 diesel engine, used during the Great Patriotic War in tanks and self-propelled artillery and very well thought of, began 40 years ago. In addition, it was used in the MAZ-525, MAZ-530 and BelAZ-548 quarry dump trucks, the MAZ-535 and MAZ-537 four-axle all-terrain-vehicles, the ATS, ATS-59 and AT-5 caterpillar truck tractors and transporters.

Aircraft-type carburetor engines were used in Soviet tanks of the 1920's and 30's. But under these conditions they were not sufficiently reliable and economical, and furthermore, were subject to danger of fire. Therefore, already in the early 1930's the task of developing a special diesel engine for prospective tank models was assigned to the design team headed by the talented engineer K. Chelpan.

The first test version of the new engine underwent trials on a test bench in May 1933. Work to further refine the engine was performed in 1937-38 by a group of engineers which included T. Chupa'khin, I. Trashutin, P. Poddubnyy, Ya Bikhman, I. Ber. Small-lot production of the engine named the V-2 was begun in 1938.

The V-2 diesels were used on the serially produced BT-7M tanks. These vehicles got their first taste of combat in the fall of 1939, when they participated in the defeat of the Japanese militarists on the Khalkin-Gol River.

A resolution was adopted in December of 1939 to set up large-lot production of the V-2 diesel and its modifications for the new T-34 and KV tanks and the "Vorshilovets" caterpillar truck-tractor. By the outbreak of the Great Patriotic War our plants had already managed to produce 1225 T-34 tanks and 639 KV tanks.

Forty years have passed since the first V-2 versions were adopted for serial production, but even today various modifications are widely used as power plants in heavy trucks, tractors and river vessels.

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MOTOR VEHICLES

LATVIAN SSR ACCIDENT STATISTICS FOR 1979

Riga SOVETSKAYA LATVIYA in Russian 12 Jan 80 p 4

[Article: "Last Year's Statistics"]

[Text] A summary of the traffic accidents on the republic's roads has been compiled at the LATVIAN SSR State Automotive Inspectorate. The figures assembled will be further studied and analyzed and specialists will draw the necessary conclusions on the basis of them. Today we will examine the main tendencies which require immediate attention.

A total of 4,601 traffic accidents occurred last year in the republic--82 less than in 1978. There were 12 less persons injured. But these figures should be of little consolation to drivers: 662 persons were killed in accidents--41 more than in the previous year. Thus, notwithstanding the reduction in the raw figures, the severity of accidents grew by 3.3 percent.

The number of fatalities increased the most in the city of Riga. Despite a considerable reduction here in the number of accidents and injuries, 130 persons--42.8 percent more than in the previous period--died on Riga's roads.

The number of accidents did not decrease in Yurmala where an increase has been recorded for all three categories: number of accidents, fatalities and injuries. Aluksnenskiy, Balvskiy, Kraslavskiy, Lielvardskiy, Limbazijskiy, Salduskiy and Talsinskiy rayons had a poor showing.

One could name the organizations with autotransport vehicles in which insufficient work for increasing traffic safety is performed. As a result, compared with 1978, last year the number of accidents increased noticeably. They include: the republic's Ministry of Communications (28.6 percent), the State Committee for Agricultural Machinery (25 percent), the Ministry of Health (9.9 percent), the Ministry of Municipal

Services (16 percent). The managers of the autotransport departments of the listed organizations have something to think about.

What were the causes of last year's traffic accidents? Excessive speed stands in first place accounting for 40.9 percent of all accidents in which drivers were at fault. Next comes driving while intoxicated-- 31 percent. These are followed by failure to yield the right of way at intersections, driving in the left lane, failure to observe proper following distance and failure to heed rules for passing.

A new year has begun. To the numerous wishes said at this time of year one could add one for drivers and pedestrians: drive without accidents and cross the street in such a way as not to place in jeopardy one's own life nor that of others.

9596

CSO: 1829

RAILROAD

CURRENT PERFORMANCE FIGURES FOR UKRAINIAN RAIL SYSTEMS, 1980 PLANS

Kiev RABOCHAYA GAZETA in Russian 26 Feb 80 p 1

[Interview with N. S. Konarev, first deputy minister of railroads:
"Move Cars Fast!"]

[Text] In the decisions of the November 1979 Plenum of the CPSU Central Committee and the talk of Comrade L. I. Brezhnev at the Plenum, the operation of railroad transport was set forth as one of the paramount problems. The country's rail systems are not fully meeting economic demands for shipping, which was correctly emphasized at the Plenum.

Our RATAU correspondent asked first deputy minister of railroads N. S. Konarev to answer a few questions.

[Question] Nikolay Semenovitch, please tell us some of the performance figures for Ukrainian railroads last year.

[Answer] First of all let me remind you that the Ukrainian SSR is served by six rail systems: the Southwest, L'vov, Odessa, Southern, Dnepr, and Donets. They account for 16 percent of the operating length of the entire rail system of our country. In addition to serving the population and economy of the Soviet Union, they carry foreign trade freight and international passengers.

I will give a few figures. Last year the freight traffic on Ukrainian railroads reached 485 billion ton-kilometers. This is five times the volume of work of the railroads in such highly developed countries as England and West Germany taken together.

The railroads of the Ukraine ship almost 28 percent of all freight shipped in the country. Our proportion is especially high for shipping

ore (59 percent), metal (37 percent), and coal (29 percent). These figures demonstrate convincingly that Ukrainian railroads have a great responsibility for the successful operation of the entire transportation system.

But we must say, in all frankness, that the railroads of the Ukraine did not fulfill their 1979 plans for numerous indexes. There were serious failures with fulfillment of the plan for shipping timber, chemical and mineral fertilizers, granulated slag, and certain other types of freight.

The railroads of the Ukraine work below their capacities for such indexes as car turnaround, meeting the train traffic schedule, and shipping by through trains. For example, the car turnaround time was 0.39 days above the norm, which resulted in the "loss" of tens of thousands of cars. Therefore, the collectives that permitted this to occur must immediately make up for underfulfillment of this index in 1979. The essential work rhythm in the concluding year of the five-year plan will be possible only if internal reserves are found and put to use.

I would like to emphasize a very characteristic feature of the Ukrainian railroads: their close production ties with republic industry. It could be said that trunk rail lines go right up to the open hearth and blast furnaces of the metallurgical plants, into the ore and coal mines, to power plants, warehouses for finished machinery, and the warehouses of other plants.

Everyone knows what an enormous role the Donets Basin plays in our country's fuel-energy complex. That is why the Ministry of Railroads give special attention to improving the stability of operations of the Donets line. Donets coal must be delivered directly, without any delays, to thermal power plants, construction sites, and enterprises of various economic sectors.

[Question] The assignments for this year are very intensive. Could you discuss the ways that these assignments are being met in greater detail, please?

[Answer] Indeed, in 1980 the railroads of our country must perform a greater volume of work than last year. This applies entirely to the railroads of the Ukrainian SSR. To take the index of freight traffic, it will exceed 500 billion ton-kilometers on Ukrainian rails. The scale of freight shipping will rise by more than three percent, which is the equivalent of shipping additional tens of millions of tons. It is especially important this year to be sure that all the different types of freight included in the plan are shipped properly.

What will this require?

The principal things, we feel, are improving the technology of the shipping process, using the traffic and carrying capacity of these lines efficiently and increasing it, improving observance of train traffic schedules, and accelerating car turnaround.

Let us take, for example, the use of through trains. This can, of course, produce a substantial economic impact. However, last year a considerable number of through routes, especially on the Donets line, were cut off.

I should mention the carrying capacity of the lines. Capacities are inadequate in numerous sectors of the rail network, some of them in the Ukraine. The government of our country and the Ministry of Railroads are taking steps to supply more technical equipment to the railroads. In 1980 and the following years significant appropriations are envisioned for development of the Ukrainian rail transport system to be used for work directly tied to increasing carrying capacity, as well as reconstruction of existing terminals, construction of new terminals, and improvement in freight-handling facilities.

The industrial ministries, who are directly responsible for speeding up the loading and unloading of cars, intend to invest a great deal of money in the development of plant transportation. However, the effectiveness of these steps will, of course, not show right away, and now we must orient ourselves to using internal reserves which are far from exhausted.

Experience has confirmed the need for close cooperation between trunk railroads and other types of transportation. We see significant reserves above all in further development and improvement of recently-approved practices of cooperation among Ukrainian rail, sea, river, and motor vehicle transportation workers and in creative application by Ukrainian transportation workers of the coordinated work techniques of transportation workers in Chelyabinsk, Leningrad, and Moscow.

I would also like to mention the important question of using car freight and passenger capacities. This is not a narrow departmental problem. Calculations show that increasing the static load by 200 kilograms would enable enterprises of Ukrainian SSR, with the same fleet of cars, to ship more than 6 million additional tons of freight and reduce transportation expenditures by five million rubles a year. Therefore, the Ministry of Railroads believes that all ministries and departments should devote maximum attention to improving the use of car freight and passenger capacity. It is our common concern.

I cannot help mentioning that we have serious complaints against enterprises that ship and receive freight for holding up cars on sidings.

Significant losses of loading resources occur as the result of serious shortcomings in the organization of unloading of railroad cars by enterprises in the republic. Car downtime is substantial at the

Yenakiyevo Metallurgical Plant, the Odessa Cryolite Plant, the Crimean Titanium Dioxide Plant, and at many other enterprises.

I am confident that if the managers of the Ukrainian railroads are persistent enough it will be possible to significantly improve the use of cars on enterprise sidings, and this will have an obvious impact.

[Question] The working people of our country are preparing for the 110th anniversary of the birth of Vladimir Il'ich Lenin. How is socialist competition going among railroad workers to celebrate this date in a worthy manner and successfully finish the 10th Five-Year Plan?

[Answer] All the railroad workers of our country received the decree of the CPSU Central Committee "On the 110th anniversary of the Birth of Vladimir Il'ich Lenin" with a sense of pride and awareness of their enormous responsibility. All the branches of our enormous sector on all trunk lines have joined in the socialist competition to celebrate the Lenin anniversary in a worthy manner. This applies to workers in traffic management, road operations and maintenance, locomotive and freight-handling services, car maintenance, communications, and supply.

We have just one goal: to mobilize reserves as best possible and be sure that the assignments of the 10th Five-Year Plan are fulfilled. I believe that the Ukrainian railroad workers, a collective of many thousands, have everything necessary to make a worthy contribution to this cause.

It is very important to organize socialist competition as broadly as possible not only among railroad lines but also with production collectives, all the way down to the worker brigade.

We know from the history of development of our country's transportation that the Ukraine was the birthplace of the Krivonosov movement, the Kozhukhar' method, and many other initiatives. The Central Committee of our party praised the know-how of Odessa transportation workers highly. This entire treasure of creative initiative must be used and enlarged as we develop competition in 1980 and in the years of the next Five-Year Plan.

11,176
CSO:1829

RAILROAD

FAILINGS OF SOUTHERN RAILROAD SYSTEM DESCRIBED

Moscow EKONOMICHESKAYA GAZETA in Russian No 6, Feb 80 p 18

[Article by N. Gubankov: "Where the Railroad Cars Stand Idle"]

[Text] The Southern Railroad System passes through eight oblasts, and only in two of them--Kirovogradskaya and Chernigovskaya--are the norms being fulfilled with regard to processing railroad cars on the sidings (spur lines) of industrial enterprises and organizations.

Especially great are the idle times at a number of enterprises in Khar'kovskaya Oblast, where the main line's losses in loading resources for this reason amounted to approximately 40,000 cars in 1979. Also failing to meet their packing and loading norms on a regular basis are such enterprises as the following: the Balakleyskiy Cement-and-Slate Combine, the Khar'kov Tractor Plant, the "KhMZ" Production Association, the "Vtorchermet" Association, and the Bezlyudovskoye Warehouse Supply Administration. The basic cause for this lies in the continuous violation of the standardized technology used in operating railroad stations and sidings.

At the tractor plant (V. Biblik, general director of the association, and B. Sokolov, chief of the railroad workshop) the production volumes increase from year to year, but many measures with regard to putting the transport system into good order have remained unimplemented. For many years now conversations have been going on about renovating Metal Warehouse No. 3. Cars arrive here with packaged loads weighing from 10 to 15 tons, but the hoisting capacity of the overhead crane is only 5 tons. The workers have to unloose the packages beforehand and then unload the rolled metal in parts. Because of this there is a doubling of the idle times of the cars, while they are being unloaded.

Plans have been made to construct a mechanized warehouse of roofs and shells for heavy-duty, wheel-type tractors. However, it has yet to be built. Therefore, cars with tires are being unloaded manually and, of course, very slowly.

There are extensive idle times of rolling stock at the Balakleyskiy Cement-and-Slate Combine. Here for six years now they have not been able to put a rotary gravity dump into operation. It was planned to start up in 1977, then in 1978, and, finally, at the end of last year. And two chutes with a belt conveyor connecting the gravity dump with the warehouse were not ready for operation either. If four minutes are required to unload a car filled with granulated slag on the gravity dump, then at present, during wintertime, several hours are spent.

The flow of cars at the combine is great, while the development of tracks is lagging behind. The rails for the auxiliary track were laid before the onset of cold weather, but the workers did not succeed in pouring the ballast of the road bed.

Ranking second with regard to losses of loading resources are the enterprises and organizations of Belgorodskaya Oblast. Last year they were to blame for the "immobilization" of more than 20,000 cars. Especially "outstanding" is the "Tsentrtyashstroy" Railroad System Association of the USSR Ministry of Heavy and Transport Machine Building (V. M. Bondarenko, Chief). Most of the 30 enterprises which this system services do not have their goods packed within the time allocated for loading and unloading. Transport operations at the sugar mills of Belgorodskaya Oblast have been badly organized.

Speaking at the November 1979 Plenary Session of the CPSU Central Committee, Comrade L. I. Brezhnev stated as follows: "We must also sharply increase the responsibility of enterprises in industry, construction, and trade for the on-schedule loading and unloading of railroad cars. The party and Soviet organs must be concerned on an everyday basis with these, as well as other, problems in transport operations."

2384

CSO: 1829

RAILROAD

INSTITUTIONS OF HIGHER LEARNING PROVIDE EXPERTISE FOR BAM

Moscow VESTNIK VYSSHEY SHKOLY in Russian No 7, Jul 79 pp 27-30

[Article by Lecturer V.N. Vorob'yev, Council of Rectors of Institutions of Higher Education, Khabarovskiy Kray: "Satisfying the Needs of BAM"]

[Text] Fulfilling the decree of the CPSU Central Committee and the USSR Council of Ministers "On Increasing the Effectiveness of Scientific Research Work in Institutions of Higher Learning," the institutions of higher learning from Khabarovskiy Kray are concentrating the efforts of their scientific workers on the solution of large and pressing problems of the national economy, first of all on those associated with the economic mastering of the region and the performance of building operations in the eastern section of BAM ahead of time. Thus, the institutes included in the Council of Rectors of Institutions of Higher Learning for Khabarovskiy Kray have 8 specific, long-term programs providing for carrying out research corresponding to the specialization of each of these institutes.

For example, the Khabarovsk Polytechnical Institute is solving a number of problems concerning the development of the national economy under the complex physical-geographic and climatic conditions of the Far East, including those in the gravity area of the eastern section of the mainline under construction.

As is known, one of the leading sectors of industry in the Far East is the lumber industry, and, in association with this, a network of new industrial timber farms is being created within the construction zone of the BAM. Development of the large taiga tracts will proceed under the complex climatic and topographic conditions here. Consequently, it is necessary to develop the type of organizational structure for using equipment and technology which would permit high labor productivity to be achieved with a minimum number of workers.

Proceeding from these tasks, the Department of Logging Mechanization, according to an agreement with the "Urgalles" Production Association, studied the question of developing felling areas on slopes with a grade greater than 20 degrees. The technical-economic research which was

conducted in association with this interest permitted us to evaluate the safety of young plantings on felling areas being worked given the present production methods. As a result, recommendations for organizing the working of mountain felling areas and the simultaneous use of a system of machinery which would permit a significant quantity of large forest areas to be brought into exploitation have been worked out and submitted for use.

The institute is studying the efficiency of and the prospects for using systems of machinery for initial wood processing along with the Far East Scientific Research Institute of the Lumber Industry. On the basis of the technical-economic research on existing and prospective machinery for lumber warehousing operations, it is being proposed that manufacturing and production requirements be drawn up for systems of such machinery and that the efficiency of their operation under the natural production conditions of the Far East, particularly at enterprises being created within the BAM zone, be substantiated. The urgency of this problem will become particularly clear if one considers that its solution will permit the industrialization of construction to be increased, the permanence and reliability of structures to be insured, their weight to be reduced and the competitive nature of bridges made from wood, rolled metal and thin-walled reinforced concrete to be improved.

In Amurskaya Oblast a unique bridge has been constructed by the institute together with the highway and bridge-building subdivisions of the Far East. The bridge was made of glued wood beams with fiberglass reinforcement; in Khabarovskiy Kray, they have constructed original bridges from disc and from wood-and-metal girders. This has permitted the development of new designs and processes for manufacturing span structures for small-span bridges to be accelerated significantly.

Along with the Institute of Tectonics and Geophysics of the Far East Science Center of the USSR Academy of Sciences, scientists have released a collection of works entitled "Questions on the Economic Development of the BAM Construction Zone," in which the design features of foundations in multi-year permafrost zone and methods for studying permafrost processes are covered. An inter-institutional collection of works entitled "Engineering-Geological and Permafrost Studies of the Far East and the BAM Zone" has also come out.

We held a scientific-practical conference on the topic "The Production and Use of Materials Based on the Mineral-Raw Material Base of the Far East" for the region with the House of Technology's participation. Reports were heard on the means and methods for reducing seasonal soil-freeze depths, as well as on methods for their thermal reclamation.

Products from the forest occupy a significant place in the pharmaceutical and food industries of the kray. Therefore, questions associated with the selection of optimal methods for calculating and evaluating raw-material bases and associated with the rules for gathering and preparing forest

products are studied at the institute with the aim of producing reliable data on the raw-material base available in the eastern section of the BAM and reducing the costs for its estimation by a factor of 10-15. Twelve developments used for incorporating and preserving forest-product resources have already been introduced at plants in this sector.

On instructions of the RSFSR Ministry of Highway Construction and Use, the Department of Highways performed a series of investigations in the area of design, construction and use of roads. In particular, a methodology for the sequence and stages of highway construction and the disposition of its production base were worked out with the use of a M-222 computer; these methodologies were used by the Khabarovsk branch of the GiprodorNII [State Planning and Surveying Scientific Research Institute of Highways] in formulating a plan for developing a network of automobile roads for the Far East for the years 1980-1990.

The scientists of the Khabarovsk Polytechnical Institute, along with this same branch, collected and made a statistical study of the natural-climatic factors of Amurskaya Oblast and Khabarovskiy Kray; this territory was zoned for highway and climatic conditions based on obtained data, and a catalog of efficient highway surfacing designs was proposed.

The 3,000 kilometers of highways in the BAM zone were examined and appropriate descriptive documents were compiled. Associates of the Department of Engineering Geology and Soil Mechanics continued their routine observations of frozen-state processes on fixed sites in the eastern section of the BAM. The department is continuing a study of the structures of road beds for highways on complex permafrost sectors together with the Omsk branch of the SoyuzdorNII [State All-union Scientific Research Institute of Roads]. Field inspections of sections of the road along the route between the stations Urgal and Fevral'sk were made, and a project of recommendations concerning the construction of highways under the given conditions was developed to provide for observance of the requirements for environmental protection.

Major and necessary work for BAM is being performed in the Khabarovsk Medical Institute. Here, over-all research is being conducted on the problem "Medical-Biological Aspects of the Adaption of Construction Workers to the Natural Conditions of the Eastern Zone of the BAM" and is being performed in collaboration with the Scientific Research Institute of Epidemiology and Microbiology of the USSR Academy of Medical Sciences, the Khabarovsk Scientific Research Institute of Epidemiology and Microbiology and the regional medical and epidemiological station. Their final goal is to develop prophylactic measures for predicting and preventing diseases in construction workers in the eastern section of the BAM and the population of adjacent regions.

Scientifically based recommendations for rational feeding of the construction workers and acceleration of the adaption process for women arriving here from the central and southern regions have been worked out and accepted. Procedural recommendations for diagnosis, cure and prevention of natural-focal and

the most important infectious diseases have been distributed to the treatment and prophylactic institutions. Eighteen scientific-practical conferences and seminars for physicians have been held based on the results of all of this research. About 20 articles have been published in the proceedings of the Plenums of the USSR Academy of Medical Sciences' Coordinating Council for Medical-Biological Problems of the BAM.

Many departments of the Khabarovsk Pedagogical Institute are participating in the development of the comprehensive topic "The Plant and Animal World of the Eastern Section of the BAM." Let us note in particular the fruitful activities of the Department of Drawing and Painting which is attracting students to work on a topic devoted to construction of the BAM. Many of their works have received high appraisal at zonal and republic exhibitions of the scientific-technical works of young people, as well as at the All-Russian exhibition of the works of students in departments of arts and graphics.

The efforts of the departments of the Khabarovsk Institute of Physical Education are concentrated on development of the comprehensive topic "Organization and Prospects for the Development of Physical Education and Sport in Regions of New Industrial Construction," affirmed by the Committee on Physical Education and Sport affiliated with the USSR Council of Ministers. The recommendations developed by the departments in the area of organization of an effective schedule of labor and rest, physical education and sports are finding application by the construction workers and physical education instructors working on the BAM.

The Khabarovsk Institute of Culture is studying the information requirements of the BAM specialists, questions of the analysis of library resources and housing for them here along with the State Public Scientific-Technical Library. The organization of cultural and educational work and the increase in personnel qualifications in the eastern section of the BAM are being studied in the Department of Cultural and Educational Work.

The Khabarovsk Institute of the National Economy is working on the problem "The Development of Productive Forces in the BAM Construction Zone." Preliminary maps of the population, domestic services and education as well as a mock-up of maps of the subject list "Light Industry of Amurskaya Oblast" have already been compiled.

For a number of years the Khabarovsk Institute of Railroad Transport has efficiently been solving the major scientific-technical problem "The Development and Introduction of New, Advanced Designs and Improved Production Processes Insuring High Quality Construction of the Mainline under Complex Engineering-Geological and Climatic Conditions in the Construction of the Baykal-Amur Mainline." The problem includes 24 topics being worked on by various departments. For example, proposals permitting the stability and the normal state of a road bed under the climatic and geographical conditions of the BAM to be assured have already been introduced. Stipulations for

constructing anti-ice-coating structures with improved designs have been examined, drawn up and are being realized by the institute together with the Dal'giprotrans [Far East State Planning and Surveying Institute of Transport]. Thus, stipulations for laying 25-meter rail with efficient organization of the conversion from "summer" clearances to "winter" and back have been developed and introduced, and an analysis of the susceptibility of the supports of small and medium-sized bridges to stresses, damage and flaws as a function of the effect of static, natural-climatic, design, material and production-technological circumstances has been performed.

The specifications for organization of the maintenance and repair of bridges for use on the BAM have been corrected, and tests of the defective reinforced concrete span structures of bridges which were formerly on the Tynda-Chul'man section of the BAM have been performed. Proposals for evaluation and inspection of the engineering status of rigid and corrugated water conduits during construction and operation of the mainline have been accepted. Recommendations for the improvement of the operating properties of small, man-made structures, including the columnar supports of bridge foundations, and conditions for elevation of the track have been made. On-site testing of the 2TE116 diesel locomotive was performed. As a result of these tests, recommendations concerning the peculiarities of diesel-locomotive operation here and for making requirements for the producer plant more precise were worked out. Experimental testing and correction of the methodological specifications for selection of the depth to which water mains are buried under conditions of a given structure were also performed.

Proposals for the effective distribution of freight flow under the operating conditions of the eastern section of the BAM and for a concrete composition insuring frost resistance through up to 300 (freeze-thaw) cycles have been developed. A device has been manufactured for drilling leader holes in frozen soil. Operational calendar plans for construction and fitting operations, requirements for labor, cost and material resources, basic machinery and equipment have been compiled for a number of construction organizations; periods for the completion of work stages and stages of construction projects have been projected. An information model of inspection and control for management of the construction project has been developed.

A conference was convened by the Scientific-Technical Councils of the Ministry of Transportation and the Ministry of Transport Construction on the topic "Problems of Further Increasing the Quality of Road Bed Installation and Maintenance in all Stages of Construction of the Eastern Section" based on the work of this institute, as well as a regional conference "Student Creativity and Problems of the BAM" which discussed 32 student papers. Twenty-two of them were recommended for incorporation and 10 for publication. A collection of works on questions of the design, construction and operation of the BAM has been published. This year, instructors at the institutions of higher learning for construction workers gave 246 lectures and 64 concerts.

Doubtless, the entire set of works which have been enumerated facilitated in many ways the increase in the quality of construction and the early commissioning of the eastern section of the BAM. In many ways, the purposeful work of the Council of Rectors promoted this; here work plans are regularly mulled over and examined, their execution is monitored and the rectors of the institutions of higher learning and representatives go out directly to the construction organizations, etc.

In conclusion, we will make several proposals. A broad scientific conference on all of the problems of building the BAM would help us very much, for example, if the RSFSR Minvuz [Ministry of Institutions of Higher Learning] would organize such a conference, having invited all interested institutes of higher learning to it. The work of each institution is being inadequately propagandized, and not just the scientific work. It is very important, for example, to discuss questions of the organization of correspondence study for the BAM construction workers, supervisory assistance for them and the development of amateur talent activities on the part of the institutions of higher learning in the construction zone.

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9194

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FOREIGN CURRENCY EXPENDITURES OF SHIPS

Moscow MORSKOY FLOT in Russian No 1, 1980 pp 16-17

[Article by I. Levin, division chief in the Planning and Finances-Currency Administration of the USSR Ministry of the Maritime Fleet, and I. Starikov, candidate of economic sciences: "Ship Currency Expenditures"]

[Text] The volume of currency and account work in steamship lines is growing as export-import shipping expands and the list of services rendered by Soviet ships to foreign charters is enlarged. All this demands improvement in currency and account relations with foreign companies and greater efficiency of ship work abroad by wise and economical expenditures for ship servicing in foreign ports.

The final result of the work of a ship traveling abroad is determined by a number of factors, including some which do not depend on the crew of the ship, such as the transport conditions of the contract of sale or purchase, the sector of the voyage and number of ports of call, technological characteristics of the cargo, and others.

We will review the factors that do depend on the crew of the ship. A significant economic impact can be achieved by skillful use of such progressive forms of navigation as shipping by lines, by sequences of ports, and by assigned cruising sectors. Shipping by line makes it possible, in addition to an improvement in the technical-economic indexes of ship work, to achieve a significant reduction in ship expenditures.

For example, a ship working in the Japanese sector may pay a tonnage fee for each call at port based on a fixed rate per ton of net register tonnage or a one-time annual fee that is three times as much as the fee paid for one call to the ports. This rule is also applied in calculating the special tonnage fee. A ship captain who knows this rule should, after three calls at Japanese ports, declare the ship's right to the privileged computation of fees.

Many other foreign countries also use lowered rates of calculating the tonnage, ship, port, and anchorage fees.

In Italy, for example, the anchorage fee can be paid for one ship call or as an annual fee, which the ship holder or captain must declare in advance, on his first visit to the port (in the calendar year). In Italy the rate of the annual fee is 12 times higher than the one-time visit fee, so it is advisable to pay the annual fee only if the ship visits Italian ports regularly, more than 12 times in the calendar year.

Ships which have entered one of the ports of Kuwait after visiting other Kuwait ports do not have to pay the port and lighthouse fees, but if they stop at this port again during the same voyage for partial loading or unloading, 50 percent of the port fee will be collected.

The lighthouse fee in Greek ports may be paid at a monthly or annual rate; the latter is three times higher than the monthly rate. When the monthly fee is paid at one Greek port, the ship does not have to pay it at other Greek ports if it has not visited a foreign port of a third country in the interim. After full payment of the annual fee the ship does not have to pay any further such fees at any Greek port regardless of whether it visits other foreign ports in the course of the calendar year.

As these examples show, shipping on lines insures a significant reduction in expenditures for port fees, not to mention other advantages.

The reduction in time at anchor in port is another important factor in reducing ship expenditures. This factor becomes especially important in those foreign ports which employ high rates for fees calculated depending on the length of time the ship is moored in port. For example, in the port of Aden the daily berthage is 10 times higher than the fee when anchored at a buoy. When ships carrying less than 500 tons enter Aden it is advisable to try to tie up at a buoy, which is much less expensive, especially when there is a possibility of unloading from there.

In ports where the amount of fees depends on the length of time the ship is tied up at the dock, it becomes especially important for the vouchers to record the precise moments of the beginning and completion of ship processing, because in some cases calculated days are figured by the calendar while in others the actual time is used.

In Bulgaria a ship fee is charged for the first 10 days a ship is anchored in the port, but then if it stays longer than that an additional full fee is charged.

As these examples show, skillful use of the rules of calculating the berthing fee, selection of the time and place of mooring, and reducing

the time at anchor in ports will enable the ship administration to significantly reduce ship expenditures in port. Ships which do not give adequate attention to submitting papers to the agent firm at the proper time usually pay additional amounts.

For example, when a ship is traveling to Kuwait the agent firm must be informed of the ship's intention to take its place in line for a dock for loading operations. The ship should send this information to the port captain, giving the ship's draft at bow and stern, the time of arrival in port, and readiness for loading operations. After having taken its place in line, the ship may be able to save traveling time by going to a nearby, later port to unload cargo while keeping its place in line for the dock in Kuwait. But the ship should not leave the port until it receives confirmation from the signal station that it has been entered on the list in line for processing in the port.

It is necessary to take a place in line for docking in Dibal (Treaty Oman), Latakia (Syria), and other ports in the Middle East.

In Dibal ships which are carrying refrigerated cargo or perishable products in amounts of less than 300 tons have a right to processing out of order. In Latakia ships whose cargo does not exceed 275 tons and whose draft is no more than 28 feet enjoy the same privilege. When the cargo is not more than 385 tons the right to occupy a dock out of order is given to ships only on the second day of anchorage.

Therefore, when ships are being loaded consideration should be given not only to the sequence of ports of call, but also to ship processing conditions at them.

The level of port fees in particular countries is also influenced by the type and amount of cargo and its placement in the holds. In Greek ports, the lighthouse fee is calculated at differentiated rates depending on the amount of cargo. For a ship with a net tonnage of 5,000 register tons a minimum rate is set for each register ton if the cargo is up to 1,000 tons, but after that the rate is doubled even if the amount of cargo is just one ton greater. Therefore, when shipping to Greece it is unwise to accept a batch of cargo weighing just over 1,000 tons, which will not even cover losses for the increase in lighthouse fee.

In Greece one should take advantage of the exclusive right to a favorable computation of the lighthouse fee. When a ship is calling at two ports in Greece for cargo operation during one trip, it may pay the lighthouse fee in one port for part of the cargo unloaded (loaded) in a different port. It is advisable to use this right in those cases where a partial redistribution of the calculated amount of cargo between the ports will make it possible to reduce the fee payment without physically moving the cargo.

For example, if a ship with a net tonnage of 5,000 register tons unloads 1,175 tons in the port of Pireus and 275 tons in Salonika, it can pay the lighthouse fee in Pireus for 975 tons, that is, 200 tons less, and pay for 475 tons (200 tons more) in Salonika, which will cut expenditures in half.

The Greek ports also employ another exceptional rule of computing the lighthouse fee. The rule provides that the maximum lighthouse fee is charged for a ship whose cargo is 20 percent of the ship's net tonnage, and the rate goes no higher. This rule demands that the ship load as much as possible, because if it does not it will face additional expenditures for each ton of cargo, which reduces shipping efficiency.

It should be remembered that in some cases the ship may face additional expenditures related to carrying deck cargo, because port rules envision an increase in calculated tonnage for calculating fees for this type of cargo.

This rule also operates in the ports of France, Pakistan, Canada, Egypt, and West Germany. Therefore, cargo should be carried on deck only when, for technical reasons, it cannot be shipped in the hold and if the charter rate for this cargo covers the additional expenditures that occur with its shipping.

In addition to employees of the economic accountability operations groups of ships and the finances-currency divisions of steamship lines, the ship bureaus of economic analysis play an important part in steadily improving ship commercial and currency-account work. Improving the level of commercial and economic work in maritime transport is one of the key tasks of the steamship lines.

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11,176
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OCEAN AND RIVER

KAZAKH SSR RIVER FLEET'S 1980 GOALS

Moscow VODNYY TRANSPORT in Russian 12 Feb 80 p 2

[Article: "Among the Socialist Pledges Taken by the River Transport Workers of Kazakh SSR for 1980"]

[Text] [In 1980 the river workers of Kazakh SSR pledge:]

To assure, by means of the introduction of advanced technology and progressive labor methods in ship repair, the preterm turning over of the transport fleet from repair, as follows: self-propelled -- in technical readiness, and nonself-propelled, in operational readiness, by 15 March 1980. To turn over for operation, with the issuance of readiness certificates, the following ports: those of the Verkhne-Irtyshskoye Steamship Agency, 15 April 1980, and those of the Ural'skoye Steamship Agency, 1 April 1980.

To assure the preterm and high-quality fulfillment of the 1980 state plan for shipments of cargo and for loading and unloading operation by 25 October, and for construction-and-installation operations, by 20 December.

By the sixtieth anniversary of the Kazakh SSR and the Communist Party of Kazakhstan, to assure the fulfillment of the plan for the Tenth Five-Year Plan by the collectives of 109 ships and four ports for the handling of cargoes for the national economy.

The collective of Kazglavrechflot pledges to fulfill the plan for the Tenth Five-Year Plan for shipments of cargo and for loading and unloading operations by 7 October 1980.

To overfulfill the 1980 planned assignments: for shipment of cargoes, by 370,000 tons; for loading and unloading operations, by 500,000 tons; for sold output, by 200,000 rubles; and for dredging operations, by 300,000 cubic meters.

To reduce the production costs, as against the 1979 plan: for shipments, by 2.5 percent; for loading and unloading operations, by 2.8 percent; in industry, by 1.3 percent; and in route management, 2.5 percent.

By means of the efficient use of transportation means and reloading technology, and the organization of the comprehensive maintenance of the fleet in ports, to reduce the fleet idle time, as compared with 1979, as follows: self-propelled, by 7 percent; nonself-propelled, by 8 percent.

To provide in 1980 an economizing of all types of fuel in the amount of 1500 tons; electrical energy, 500,000 kilowatt-hours; and rolled ferrous metals, 105 tons.

To introduce into production 265 efficiency-improvement suggestions, with an economic benefit totaling 160,000 rubles.

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OCEAN AND RIVER

OVERVIEW OF SIBERIA'S RIVER TRANSPORT SYSTEM

Moscow IZVESTIYA in Russian 18 Jan 80 p 2

[Article by P. Drachev, deputy chief of the West Siberian Steamship Line, and L. Levitskiy, correspondent, Tomsk: "Jams on Siberian Rivers"]

[Text] Siberia has always lived by its rivers. Cities and towns large and small have grown up on the steep river banks, along the curves and straight stretches. The very possibility of being cut off from the water, the only road back to the real world, was frightening.

Much water has flowed into the Arctic seas since those ancient days, but the Siberian rivers have not lost their role in development of the boundless spaces. Instead their role is greater today. Vital support activity for the enormous economic complex in West Siberia is carried out along them. The Ob', Irtysh, and their tributaries account for 85 percent of all freight traffic. This means tens of millions of tons of equipment, materials, pipe, prefabricated buildings, food products, and industrial goods. The traffic on these blue roads grows fuller, and jams occur. There is simply no substitute for the rivers.

Last navigation season the river transport workers accepted only 70 percent of the orders of enterprises in the far northern oil field. This was not the fault of the Siberian rivers. They are used half as much as the average waterway in the country. The Ob'-Irtysh system is only one-twelfth as productive as the Volga-Kama system. It is not fair to criticize the river workers. In Tomsk, for example, since the start of the five-year plan they have transported 2 million tons of freight beyond the plan. The problem is in the extremely slow growth of river transport enterprises. They do not have enough ships, especially specialized ones, the development of port facilities on shore is lagging behind, and there is no coordination among all types of shipping.

Under Siberian conditions these problems result in virtually insurmountable barriers. Here is just one example. Nature had carefully concealed

its treasures among impassable marshes and ancient "urnans" [translation unknown]. The only paths to them were tributaries of Ob' and Irtysh. The first response to the roar of the oil and gas gushers was the faint whistle of river ships. The whistles were faint because large ships cannot travel through shallow water. The fieldworkers had begun development of this new oil region in the middle of the world's largest swamp, the Vasyuganskiy swamp. Shipping along tributaries and channels of the Ob' immediately increased six times. Nonetheless, more than half of the equipment and material scheduled for shipping had to spend the last winter in Tomsk.

The river workers do not have the necessary fleet. More than 100 types of vessels travel along the small rivers. One can imagine the difficulties that operations workers who do not have a technical base in the North must overcome. The oil workers, builders, and pipeline workers themselves are not prepared; they had only just arrived in the taiga. Even the barely suitable work site had to be wrested from the swamp. It took almost three days to move a ton of cargo to the bank. Downtime used up the already small fleet.

The Vasyuganskiy region is not an exception. For 30 years now the pivotal base city of the petroleum workers has been supplied by water. And for all these years it has operated with temporary wharves. Every enterprise has its own little, incompletely built dock. There has been a great deal of talk about this, but fully mechanized docks for groups of enterprises simply have not appeared in the northern part of West Siberia. If ship downtime were eliminated, an additional 2-3 million tons of freight could be shipped.

A great deal has been done, of course, in past years. Large mechanized ports have been built in Tomsk, Kolpashev, and Surgut. The fleet has received powerful tugs. Passenger ships have been greatly improved. New floating cranes and dredges have been added. The improvements are noticeable, but they are plainly inadequate. Not even the compressed plans have been met. Tomsk enterprises received just 60 percent of the dry cargo ships promised. Development of the production base is breaking down. In four years subdivisions of the Ministry of Transport Construction barely fulfilled the two-year plan of work for river transport workers.

The Tomsk workers intend to fulfill the intensified assignment for next year primarily by making fuller use of internal reserves. But in the 11th Five-Year Plan shipping volume will increase by almost one-half. Their own resources, without reinforcement, will not be enough for that. It takes about two navigations seasons to bring new ships from the European part of the country to the Ob'. Thus, help is needed without delay.

Attempts to transfer traditional methods to Siberia and its climatic conditions are rarely successful. River transport has made little adjustment to the region which it is serving. The navigation season on our rivers is short. It begins in June and "shchuga" [slush ice] is appearing in the rivers by late October. All the ships hasten southward to arrive before the Tom' freezes. It is where the shipyards and winter moorings are. The waters of the Ob' continue running alone for almost a month. The river would like to work some more. Finally the ministry has promised to assign an icebreaker to it. It will maintain a channel on the Tom' and prolong the navigation season by 20-30 days. This will mean an additional 600,000-700,000 tons of freight for the north.

In our opinion, the present structure of river transport in West Siberia is not appropriate to current challenges. The efficiency of shipping will not be improved without revising its planning and organization. The Ob'-Irtysh Basin with 35,000 kilometers of waterways is divided up among three independent steamship lines: the West Siberian and Irtysh lines that belong to the RSFSR Ministry of the River Fleet and the Upper River Fleet of the Kazakh SSR. Departmentalism gives rise to many kinds of miscoordination: empty runs and irrational use of ports. Procedural difficulties stand like bastions at the intersections of ownership.

The odd situations that occur can be exemplified by the way gravel, one of the most common loads, is shipped. Kazakh river workers deliver it to Surgut from Semipalatinsk and Pavlodar; West Siberian river workers ship it to the same city from Tomsk. Irtysh ships are loaded with gravel in Surgut and sent to Omsk, on the approaches to Semipalatinsk. Along the way they meet empty barges traveling to Tomsk for lumber.

Transshipment ports suffer particularly from departmental barriers. There are nine of them in the basin. Many times some of them are packed with railroad cars and others have none. There should be one organization in charge on the Ob' and Irtysh, a unified steamship line. According to calculations by specialists, this alone would increase shipping volume by 25-30 percent. The experience of the Volga and Lena shipping lines confirms the efficiency of this new structure.

The need for changes is concealed somewhat by the appearance of well-being. The distorting mirror in this case is the primary index of the work of river workers, the ton-kilometer. The example with gravel above shows the kind of figures that can be mounted by hauling from one place to another. The national economy does not need astronomical ton-kilometer figures, it needs loads delivered exactly on time. It is wiser for the receiver to pay for the improvement in the "output" of the river workers.

If you reduce normative time and expenditures you will receive a supplement to the rate. If you take longer you will receive less. This system of payment would bring the interests of transport workers closer to those of the people they serve.

The index of labor productivity is even more conditional. It does not provide incentive to conserve either one's own labor or the labor of others embodied in the ships and equipment. At the present time, the struggle to fulfill the plan often stands in the way of performing the target challenges of the region. We have already mentioned the difficulty of developing operations on small rivers. There is no greater problem for Siberian river transport workers. The tributaries of the main routes are the only arteries of river life. Almost a ton of freight is shipped to drill one meter of a well, and the same is true for each square meter of a building. The more vigorous river workers are in helping the prospectors, the more they suffer in their own economy. It is one thing to operate a 3,000-ton barge on the Ob' and something quite different to sail a 200-ton ship on the capricious, winding Vasyugan. But the schedules of rates do not take account of these "subtle matters."

Nonetheless, the freight must be carried, and the departmental fleet is steadily growing. Each horsepower of this fleet does one-fifth the work done by one horsepower for "real" river workers. The cost of delivering one ton is almost 10 times as high. Shipping on winter roads is even more expensive. This means that it is time to give all departments involved in the problem incentive to develop operations on the small rivers. Each river should have its own official description which defines the possibilities and conditions for operations. Small rivers are roads that nature has built for us. There is no doubt that their role will increase sharply in the coming years.

Science and technology have already designed ships that appear specially made for Siberia. They are capable of sailing, flying above the water, ice, and snow, and coming out on shore. These are ground-effect and air cushion vessels. Their advantages are high speed, adequate cargo capacity, and capability for use in all seasons. The cost of delivering freight with them is significantly less than using winter roads and aircraft, and is not higher, ultimately, than shipping in conventional ships.

Let us recall that about 35,000 kilometers of waterways are now used in West Siberia during the full navigation season. With the appearance of ground-effect ships the length of routes will quadruple, and there will be year-round operations. Virtually no remote, inaccessible places will be left. It will no longer be necessary to establish enormous insurance stocks at northern prices and build storage facilities for them. This alone will save tens of millions of rubles.

The social factor is equally important. Almost half of the northern river workers are discharged at the end of the navigation season. There is no greater problem for river transport than this kind of mobility. Job permanence is a condition for highly skilled collectives.

The assortment of ground-effect vessels is adequate for both shipping and passenger work. Any shipyard, including the one in Tyumen', can produce them. What is standing in the way? IZVESTIYA has already written about the problem of transport by ground-effect vehicles. It is the same for river transport.

Economic development of Siberia is above all the development of space. The rivers are loyal and reliable servants to us. But the blue roads are capable of much more.

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OCEAN AND RIVER

DEVELOPMENT OF RIVER TRANSPORT IN MOLDAVIAN SSR

Kishinev SOVETSKAYA MOLDAVIYA in Russian 12 Jan 80 p 2

[Article by I. Mostovoy, chief of the Main Administration of the River Fleet attached to the Moldavian SSR Council of Ministers (Bendery): "Off the Rails—Onto the Ferry"]

[Text] Only two navigable arteries cross our republic--the Dnestr and the Prut. They are not notable for a high water level, breadth and other merits, which are applicable to rivers. But for all the "modesty" they are worker-rivers, over which the transportation of freight and passengers is carried out almost year-round.

When assessing their contribution to the five-year plan, the Moldavian river workers cannot but ask themselves the questions: was and is river transport being used effectively enough in the solution of national economic problems, was everything done to increase the intensity of operation of the fleet, to increase the volume of freight traffic and to improve the cooperation between river, rail and motor transport?

Now, having entered the final year of the five-year plan, which, according to the definition of Comrade L. I. Brezhnev at the November CPSU Central Committee Plenum, should become the basis for the next five-year plan, is the very time to analyze thoughtfully and seriously the work of the republic transportation system and river transport as an important link of it.

In the past four years the rate of use of the fleet, the capacities of the ports and the navigable routes has increased substantially. Much has been done to organize more rational traffic. River transport of the republic assumed a part of the load, having spared the railroad from economically inexpedient traffic. Thus, in 1978 the delivery of crushed stone in the amount of 200,000 tons from the station of Vyzhnitsa to Ataki began to be carried out via the Dnestr.

Steps have been taken to reduce the shipments of sand-gravel mixture from the ports of Rybnitsa and Varnitsa to the railroad stations of Yargora, Prut, Kagul and Vulkaneshty by through, combined rail-water traffic. Now

the needs of the stations for sand-gravel mixture are being met by extraction which has been developed in the bed of the Prut, which is making it possible to deliver this construction material by through water traffic. In 1979 another changeover of traffic from the railroad to water was carried out: powdered lime for the Bendery Plant of Insulation Materials from the organizations of the central delivery administration.

The introduction here of the advanced know-how of the collectives of the Leningrad Transportation Center was of considerable importance for the development of river traffic. This has made it possible already today to increase the level of freight handling at the port of Varnitsa by the direct "ship-car" version from 45 to 60 percent. Owing to this the demurrages of ships for loading operations were reduced by 27 percent as compared with 1977. By means of the shortening of the time of handling and compact loading at the ports of Varnitsa and Rybnitsa about 2,500 cars were released.

However, it should be admitted that the opportunities to increase freight and passenger traffic over inland waterways are still not being taken adequate advantage of, and the proportion of river transport in the total freight turnover of the republic continues to be negligible.

One of the reasons for this is the poor coordination of the operation of all types of transport. This is having the result that many ministries and departments are using river transport inadequately for the delivery of mass cargo to enterprises and transshipment points, which are located near river routes, and are poorly developing berth and warehouse services, often resorting without grounds only to the services of railroad workers and motor transport workers. And this is when there is an acute shortage of cars and a great overburdening of the railroad, when there is an enormous degree of employment of motor transport in freight and passenger traffic.

Another factor, which is checking the development of river transport, is its weak material and technical base, the poor condition of navigable routes and the lack of preparation of the republic as a whole for the complete development of rivers for transportation.

Meanwhile, by 1985 the volume of freight traffic on the rivers has to be increased considerably as compared with the planned level of 1980. The way to solve this problem lies first of all in the increase of the efficiency and quality of operation of river transport by means of the improvement of operating activity, the decrease of deadhead runs and demurrages of ships, the extensive dissemination of advanced methods of the operation of the fleet, ports and transportation centers.

It stands to reason that for this it is necessary to equip the ports with highly productive machinery and to improve the technology of loading and unloading operations. In order to maintain the fleet in the proper technical condition it is necessary to solve the question of allocating to the Moldavian Main Administration of the River Fleet one floating dock with a lifting capacity of up to 600 tons and two repair ships. For the

development and improvement of the condition of the navigable routes of the Dnestr and Prut rivers during the 11th Five-Year Plan it is extremely necessary to augment the fleet of service craft with suction dredges, dredges and so on. If such a fleet of service craft is available, our river engineers will be able to increase the guaranteed running depths of ships in the upper reach of the Dnestr. This will make it possible to ensure steady shipments of crushed granite from the Kosoutsy quarry of the Soroki Construction Materials Plant during the entire navigation period. It is also planned to increase the volume of freight traffic for the Ataki Plant of Reinforced Concrete Items of the Moldavian SSR Council of Kolkhozes.

Of course, the increase of the volumes of shipments of construction materials requires the development of berth services: the construction of departmental loading berths in Kosoutsy and Ataki and the renovation of the port of Rybnitsa.

The changeover of freight traffic from rail and motor transport to river transport in intrarepublic traffic is being delayed considerably due to the lack of a navigation lock through the dam of the Dubossarskaya GES and the inadequate clearances of the shipping lanes, especially on the upper Dnestr. At present the technical and economic substantiation of the renovation of the Dubossary Hydraulic Development is being carried out by order of the USSR Ministry of Power and Electrification. During this work, in our opinion, provision should be made for measures which will have a significant influence on the development of freight traffic and tourism on the Dnestr.

The changeover of shipments of Donets coal for the Moldavskaya GRES to through water traffic is of enormous importance for the regulation of the operation of transport. At present it is being carried on ships of the Ukrainian SSR Main Administration of the River Fleet with reloading onto the railroad at the Nikolayevka river port. In order to eliminate these unproductive expenditures, the Ukrainian State Planning Institute of River Transport on the order of the Moldavian SSR Main Administration of Power and Electrification is carrying out the technical and economic substantiation of traffic according to the plan: the Dnepr--the Black Sea--the Dnestr estuary--the channel of the Turunchuk, with the construction of a departmental river berth. This will require, in turn, the augmentation of the Dnestr fleet with inshore craft--self-propelled cargo motorships and type M towing motorships. Owing to this it may be possible to increase the volume of coal shipments in water traffic.

The question of building a nonpropelled fleet, which has the right of access to the littoral zone of the Black Sea, also requires attention.

In order to solve these problems it is necessary to reinforce the Moldavian fleet with highly skilled personnel. It has been decided to set up a sectoral academic course combine in the near future at the basis of the educational center of the Dnestr River Steamship Company. It will train operators of portal and floating cranes, gas-arc welders, assemblers of the hulls

of metal ships, hoist operators and other specialists. The vocational and technical schools of the republic will also train skilled workers for the fleet. Steps are being taken so that ship navigator-engineers and other specialists of average skill will be sent here to work according to the interdepartment distribution from the Kiev and Astrakhan' river schools. In order to provide the people with housing, it is proposed to put into operation several thousand square meters of living space. The construction of Pioneer camps, kindergartens and out-patient clinics is also called for.

Understanding the scale and complexity of these problems, the Moldavian river workers will exert every effort to solve them.

7807

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OCEAN AND RIVER

UKRAINIAN SSR RIVER TRANSPORT EXAMINED

Moscow VODNYI TRANSPORT in Russian 28 Feb 80 p 2

[Article by special correspondents E. Moskvina and A. Davidov entitled: "Along a Path of Efficiency"]

[Text] For the personnel of the GURF [the Main Administration of the River Fleet], the past four years of the Five-Year Plan were years of further active development of the industry. It is sufficient to note that in this period, 191 million tons of cargo were hauled which is 1.5 million tons more than the corresponding number for the 9th Five-Year Plan. These high indices were achieved because the main administration developed and carried out measures that made possible the reliable fulfillment of plans throughout the navigation season. The management of the winter navigation season should be noted as the foremost among these measures. In the period between the seasons, 100,000 tons of iron ore pellets were hauled on the transit line from the Dnepropetrovsk mining and ore-concentrating combine to Dneprodzerzhinsk. A careful preparation of the fleet, the Dneprodzerzhinsk lock, and the route conditions preceded this. At the same time, transportation was accomplished in winter conditions and the ports, with their local fleets, delivered 3.8 million tons of cargoes to consumers.

The operation of large, pushed tows became more widespread. Such haulages grew by 23.6 percent compared with the previous year. New cargoes were found and drawn into water transport.

For their parts, Glavrechflot [the Main Administration of the River Fleet] and the ports are paying special attention to improved coordination of the operations of mixed forms of transport in accordance with the experience of the Leningraders. In the majority of the water transport terminals in the basin, unified technological processes have been introduced into the operations of ports, railroad stations, and trucking enterprises. The passing through of bills of lading has been organized.

As we see, there are successes, and they are significant. The achievements were concisely summarized by N. Slavov, the chief of GURF, and he was followed by: G. Antonyuk, the secretary of baskomflot [the basin committee of the trade union of workers of the seagoing and river fleets], P. Savolyuk, a brigade leader of ship assemblers from the Kiev SSRZ [shipbuilding and repair plant], V. Tryapkin, director of the Zaporozh'ye SSRZ, and N. Pokotilo, a leader of a comprehensive brigade of Kiev port workers. Attention was focussed mainly on the unsolved problems and questions, and on the prospective development of the river transport of the republic. The speakers emphasized in particular that there are still solid gains to be made through the management of transportation. Thus, in the last navigation season, nonproductivity due to standstill time in the fleet as a whole reached 12 million ton-days which exceeds that index for 1978 by 36 percent. For the transit fleet, this standstill time has grown by a factor of 1.5. Of all the ships that were in loading and unloading operations, every fourth one was processed with a loss of time. It was estimated that curtailment of these idlenesses, if only by a half, would make it possible to get 2 million rubles in supplementary revenues.

Also, such indices as the proportion of time in which overloaded mechanisms were used, worsened. In 1978 it was 31.4 percent, but in the past it has been limited to 29.4 percent. Essentially, the idleness of machines in unplanned repairs was affected by this. These idlenesses amounted to 36,200 hours, which is equivalent to the idling of five cranes for a whole navigation season. Delays of ships for winter damage repair still take place. This led to the loss of 493,000 tonnage-days.

It was indicated that in Glavrechflot for the time being, little attention is being given to container transport. The inventory of containers is growing feebly. Of 9,500 containers, more than half are wooden, and a significant part of them are subject to write-off.

Great losses of working time require improvement in the management of giving leave to fleet personnel during the navigation season.

At the conference the successes in the operation of the passenger fleet were noted. But here also, there are deficiencies. In the 1979 navigation season, 834 passages were cancelled, half of them for technical reasons. Substantial improvements are being noted in the comprehensive servicing of the fleet. At the ports of Kiev, Dnepropetrovsk, Zaporozh'ye, and Kherson the cleaning of ships of the residues of cargoes and water was poorly managed. The management of the repair of the fleet in the roadsteads is to be improved especially in the ports of Kiev, Chernobyl', and Dnepropetrovsk.

Railroad men have an active part in all the doings of the republic's river men. In the complex conditions of low-water navigation seasons, they have maintained the planned amount of freight on the route and the uninterrupted servicing of shipping arrangements. As the speaker emphasized however, it

is impossible to consider it as normal when the referred to condition for floatation exists only under ideal conditions. The smallest ice formation upsets its operation and throws off the rhythm of movement of the fleet. A resolution of the questions on the reconstruction of the waterways is required without delay in view of the profound loss of capacity of the Dnieper reservoirs in low-water years. To correct this, it is necessary to remove great quantities of soft and rocky soils. Under these conditions, Gosplan of the USSR must find the means to implement the request of the republic's Glavrechflot for delivery of a dredging fleet and other equipment.

In the work of the industrial enterprises of the GURF there are well defined advances. For four years of the Five-year Plan, they have fulfilled the plan according to gross output by 100.9 percent, and according to realization, by 102.7 percent. It is impossible however, not to note that they are not fulfilling the shipbuilding program of the Five-year Plan. This speaks very negatively about the prospects for increasing transport volume. The great capital investment in the development of the powerful industrial enterprises is not yet giving the proper yield. In the Ukrainian Glavrechflot system, practically speaking, the tonnage of the cargo fleet is not being increased. What is happening therefore, is that in a year, about the same number of ships are built as are being written off for obsolescence and physical wear. As viewed from the GURF, there is virtually no growth in the cargo fleet. Hence, there is a need for a thorough reconstruction of the operations of the industrial enterprises, and for an improvement of the management of labor in them.

Constructors for the republic's Glavrechflot face critical problems. The plan for four years of the Five-Year Plan, according to the total of the annual assignments to Ukrechstroy [Ukrainian River Fleet Construction Trust] was fulfilled by 103.2 percent. For the expired period, 161.2 million rubles of capital investments were assimilated and 27.55 million rubles of construction and installation work was completed. But here in 1979, Ukrechstroy has coped with only 91.2 percent of the state plan for capital construction. What is especially important, 169,000 rubles of capital investment in housing was uncompleted.

The basic reasons for such a situation were interruptions in material and technical supplies and deficiencies in the management of the construction business. Individual clients did not provide the rivermen with project documentation in a timely fashion, were inefficient in the clearing of sites, and did not pay attention to the fulfillment of contract obligations. It was noted that it is necessary to improve performance, and not to violate the deadlines for the distribution of design documentation. Also, it was noted that it is necessary to satisfy the increasing demands for the creation of a new modern fleet more fully and to solve the problems in the creation of automated systems of control for the river fleet more expeditiously.

It is well known how great an influence the introduction of the achievements of science and developed technology has on raising the efficiency of transport operations. Right now, in the Ukrainian Glavrechflot, a new, more modern pushed tow is being developed from a cargo motorship and an attachment unit [integrated tow?] having a total cargo capacity of 6,000 tons. On the basis of the project 1430 motorship, a passenger ship with enlarged passenger capacity, and certified for operation in the fall and winter period is being developed.

At the industrial enterprises, large-block and block-section methods of constructing ships are receiving further development. The use of standard carriages for the assembly of hull sections is being enlarged as also is the use of automatic welding machines and other new tools. Because of the measures for raising the technical level of production, in 1979 alone, 330 men were released and the net cost of production was lowered by 220,000 rubles.

Nevertheless, a number of problems which, if worked out, could raise the efficiency of the river fleet still more, are being resolved poorly. Insufficient work is being done on landing and attracting new cargoes to river transport, and small-scale mechanization is being introduced slowly.

The need to provide the rivermen of the Ukraine with modern icebreakers has ripened sharply, especially as they have accumulated experience in the management of winter navigation and intend to operate the year around. This is a very important problem of the national economy, and it is necessary to assume that Gosplan of the USSR will find the means to allot the necessary number of icebreakers or ships of the icebreaking type to the rivermen of the republic. The fleet for river and sea navigation needs replenishment. The present allotment to it of two motorships per year clearly does not meet the requirements for sharp growth or the possibilities for raising the amount of haulage between the ports of the Dnieper and the Danube.

The rivermen of the Ukraine have rapidly developed socialist competition on a large scale in honor of the 110th anniversary of the birth of V. I. Lenin. For this noteworthy date, about 300 collectives of shops, sections, brigades, and ship's crews have committed themselves to fulfill the assignments of the 10th Five-Year Plan, and more than 600 production leaders already are working on the account of the 11th Five-Year Plan.

N.M. Chebotnikov, chief of the department of transport and communications of the CC CP Uk, took part in the work of the enlarged conference of the board of the Ukrainian Glavrechflot and the presidium of the Dnieper bas-komflot. Yu. A. Pochatey, a responsible worker of USSR Gosplan, M.M. Yashnik, head of a department of UkSSR Gosplan, and D. I. Markov, chief of an administration of the UkSSR Ministry of Finance, appeared at the conference.

9136

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STATISTICS ON THE CEMA TRANSPORT FLEET

Moscow MORSKOY FLOT in Russian No 1, 1980 pp 44-45

[Article: "The Transport Fleet of the CEMA Countries"]

[Text] The Ship Chartering Coordination Bureau of the Council of Economic Mutual Assistance published in 1979 its regular collection of figures on the maritime transport fleet of the CEMA countries (with the exception of Vietnam) as of 31 December 1978. The publication is based on information received from maritime shipping lines in Bulgaria, Hungary, East Germany, Cuba, Poland, Romania, USSR, and Czechoslovakia. It contains information on the cargo-carrying maritime transport fleet only and includes ships with gross tonnage of 100 register tons and more (not counting transport vessels in the service of fishing and passenger vessels).

Table 1 below shows that the transport of the CEMA countries in 1978 had a total deadweight of about 29.6 million tons and a gross tonnage of 20.2 million register tons.

Table 1. Types of Marine Transport Vessels in the Fleet of the CEMA Countries.

Types of Vessels	Number of Ships	Gross Tonnage, reg. tons	Deadweight, Tons
Cargo-Carrying Fleet — Total	2,590	20,189,584	29,621,958
Included in Total:			
Combined Vessels for Bulk Dry and Fluid Cargoes (Bulkers-Tankers)	10	459,163	783,855
Tankers	390	5,859,441	9,404,681

(Table continued on next page)

(Table 1 continued)

Types of Vessels	Number of Ships	Gross Tonnage, reg. tons	Deadweight, Tons
Included in Above:			
For Liquefied Gas	9	62,627	63,704
Ships for Chemicals	4	27,836	39,041
Dry-Cargo Ships	2,190	13,870,980	19,433,422
Included in Above:			
Bulkers	307	3,979,043	6,242,079
Refrigerator Ships	48	237,969	241,334
Container Ships	95	544,377	625,958
Ships with Horizontal Loading (ROBO)	36	181,497	228,880
Sea Ferries	30	143,556	84,426
Lighter Carriers	1	35,300	36,600

According to figures from the Lloyds Register (MORSKOY FLOT No 5, 1979), the total gross tonnage of the world merchant fleet in 1978 was 406,200,000 register tons, of which 26,238,000 register tons was vessels not participating in merchant shipping. Thus, the gross tonnage of the transport fleet of the CEMA countries was about 5.3 percent of the world transport fleet. The CEMA countries had 3.2 percent of the tankers (including ships to transport liquefied gas and liquid chemicals) and about 1.7 percent of the combined vessels (bulker-tankers). The CEMA countries accounted for roughly eight percent of the gross tonnage of the world dry-cargo fleet. However, the share of dry-cargo ships operating on lines (container ships, ferries, ROBO ships, and lighter carriers) was significantly lower, 5.1 percent. The fleet of the CEMA countries was developing on a planned basis, according to which the paramount goals were to satisfy their own domestic and foreign trade shipping needs. A significant part of foreign trade involves maritime shipment among the socialist countries.

The maritime transport fleet of the CEMA countries grew particularly fast in the 1960's. Since the early 1970's the socialist countries

have devoted considerable attention to improving the qualitative structures of the transport fleet, saturating it with highly productive specialized ships, and having vessels of the appropriate types for the needs of their national economies and foreign trade. The planning principle in development of the maritime transport of the CEMA countries enabled them to avoid overproduction of tonnage and the repercussions of the crisis in world shipping that developed in the mid-1970's. Table 2 (next page) represents the share of each particular country in the deadweight of the transport fleet of the CEMA countries and the rate of growth in deadweight. Between 1970 and 1978 the deadweight of the transport fleet of the CEMA countries increased by 13 million tons.

Among the CEMA countries the Romanian fleet has grown most rapidly in recent years, almost doubling its deadweight between 1975 and 1978. Hungary, Cuba, and Bulgaria have also increased the tonnage of their fleets rapidly. The deadweight of the USSR transport fleet increased from 11.9 million tons in 1970 to 18.4 in 1978.

Table 3 below shows the composition of the Soviet transport fleet by type of vessel, number of ships, deadweight, and gross tonnage as of 1 January 1979. According to figures from the USSR Register (published in MORSKOY FLOT No 5, 1979), the gross tonnage of all Soviet maritime vessels (100 register tons and larger) at this time was 21,257,376 register tons. Therefore, the cargo-carrying transport fleet constitutes 6.5 percent of the gross tonnage of the entire USSR maritime fleet.

It should be kept in mind that the figures published by the USSR Register do not single out transport ships serving the fishing fleet, passenger ships, and certain other kinds which the CEMA Ship Chartering Coordination Bureau does not include in its yearbooks, which are prepared on the basis of figures on the cargo-carrying fleet of maritime steamship lines of the USSR Ministry of the Maritime Fleet. For this reason, the number of ships and gross tonnage of the transport fleet according to the figures of the USSR Register as of 1 January 1979 (subtracting service-auxiliary, local operations, technical, and other special-purpose ships) differ slightly from the figures in Table 3. Thus, the gross tonnage of the entire transport fleet on record at the USSR Register is 15,235,958 registered tons and the number of ships is 2,966.

When analyzing statistical data on the world fleet it must be considered that there is a significant difference (6-7 percent) between the publications of the Lloyds Register concerning the gross tonnage of the Soviet maritime fleet and the figures of the USSR Register. Thus, according to the official figures of the USSR Register for 1 July 1978 (MORSKOY FLOT No 10, 1978), the gross tonnage of the USSR maritime fleet was 20,826,000 registered tons, whereas the publications of the Lloyds Register gives the figure as 22,262,000 registered tons. In

Table 2. Deadweight of the Transport Fleets of CEMA Members in 1970-1978 (in thousands of tons)
Growth in Deadweight, 1975-78 as % of 1975

Countries	1978			1978			1978			Share of All CEMA**	Growth in Deadweight, 1975-78 as % of 1975
	Total	Dry Cargo	Tank-ers	Total	Dry Cargo	Tank-ers	Total	Dry Cargo	Tank-ers		
Soviet Union	11,930	7,330	4,600	14,998	9,958	5,040	18,418	11,633	6,785	62.2	22.8
Bulgaria	937	680	257	1,163	717	446	1,456	942	514	4.9	25.2
Hungary	36	36	-	72	72	-	111	111	-	0.4	54.1
East Germany	1,321	1,033	288	1,793	1,271	522	1,857	1,431	426	6.3	3.6
Cuba	-	-	-	558	495	63	903	810	93	3.0	61.8
Poland	1,787	1,707	80	3,876	2,864	1,012	4,290	3,309	981	14.5	10.7
Romania	508	398	110	1,213	771	442	2,354	1,748	606	7.9	44.0
Czechoslovakia	137	137	-	224	224	-	233	233	-	0.8	4.0

Totals 16,656 11,321 5,335 23,897 16,374 7,525 29,622 20,217 9,405 1000.0 5,725 23.9

* Includes combined ships (bulker-tankers).

** Share of the total deadweight of the fleet of the CEMA countries, in percentages.

Table 3. Types of Vessels of the USSR Maritime Transport Fleet

Types of Vessels	Number of Ships	Gross Tonnage, reg. tons	Deadweight, tons
Cargo-Carrying Fleet — Total	1,701	12,859,460	18,417,851
Included in Total:			
Combined Vessels for Bulk Dry and Fluid Cargoes (Bulk-Tankers)	7	404,353	698,478
Tankers	331	4,375,711	6,784,663
Included in Above			
For Liquefied Gas	8	61,328	61,929
Ships for Chemicals	-	-	-
Dry-Cargo Ships	1,363	8,079,396	10,934,710
Included in Above:			
Bulkers	100	1,127,488	1,755,538
Refrigerator Ships	31	166,261	153,238
Container Ships	56	382,738	412,934
Ships with Horizontal Loading (RORO)	30	166,348	204,428
Sea Ferries	18	83,716	48,817
Lighter Carriers	1	35,300	36,600

other words, the gross tonnage of the Soviet maritime fleet is overstated by 1.4 million register tons.

The yearbook of the CEMA Ship Chartering Coordination Bureau gives detailed figures on the composition of the fleets of all steamship lines. In the Soviet Union the fleet of the Novorossiysk Steamship Line has the greatest deadweight, exceeding 5.2 million tons (see Table 4); about 600,000 of this is bulker-tankers and the remainder is tankers. The largest dry-cargo navigation enterprises in the USSR are the

Table 4. Distribution of the Cargo-Carrying Transport Fleet by USSR Maritime Steamship Lines

Line	Entire Fleet			Tanker Fleet			Dry-Cargo Fleet			Bulkers-Tankers	
	A	B	C	A	B	C	A	B	C	A	B
Azov	123	547,259	723,201	1	1,754	1,660	122	545,505	721,541	-	-
Baltic	160	1,088,484	1,536,812	-	-	-	160	1,088,484	1,536,812	-	-
Georgian	42	525,224	894,378	41	322,436	473,045	11	202,788	321,333	-	-
Far East	250	1,534,920	1,944,289	-	-	-	250	1,534,920	1,994,289	-	-
Kamchatka	52	162,551	191,332	4	6,595	6,324	48	155,956	185,008	-	-
Caspian	72	298,286	339,776	37	160,351	204,550	35	137,935	135,226	-	-
Latvian	105	837,790	1,138,817	59	664,425	956,483	46	173,365	182,334	-	-
Lithuanian	37	123,145	157,241	-	-	-	37	123,145	157,241	-	-
Murmansk	58	370,357	521,865	-	-	-	58	370,357	521,865	-	-
Novorossiysk	137	3,216,089	5,249,801	131	2,849,528	4,615,656	-	-	-	6	366,561
Primorskiy	56	367,258	523,625	56	367,258	523,625	-	-	-	-	-
Sakhalin	72	278,497	334,876	-	-	-	72	278,497	334,876	-	-
Northern	146	570,602	802,488	2	3,364	3,320	144	567,238	799,168	-	-
Soviet Danube	61	199,549	236,314	-	-	-	61	199,549	236,314	-	-
Black Sea	234	2,500,967	3,577,853	-	-	-	233	2,463,175	3,513,520	1	37,792
Estonian	86	238,482	295,183	-	-	-	86	238,482	295,183	-	-
Total	1,701	12,859,460	18,417,851	331	4,375,711	6,784,663	1,363	8,079,396	10,934,710	7	404,353

A = Number of Ships
 B = Gross Tonnage, register tons
 C = Deadweight, tons

Black Sea and Far Eastern Steamship Lines, which account for about 5.5 million tons of deadweight. In all the Soviet transport fleet at the start of 1979 had 1,701 ships with a total deadweight of 18.4 million tons and gross tonnage of 12.9 million register tons. It is first among the fleets of the CEMA countries and accounts for 62.2 percent of their total tonnage in terms of deadweight.

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11,176
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OCEAN AND RIVER

RIVER FLEET TRANSPORTS SIBERIA'S OIL AND GAS

Moscow VODNYI TRANSPORT in Russian 4 Mar 80 p 2

[Article by "our own correspondent," under rubric "Stages in a Long Path": "Siberian Acceleration"]

[Text] On 12 April 1978 Leonid Il'ich Brezhnev congratulated the Tyumen' and Tomsk petroleum workers on a remarkable labor victory -- since the beginning of the exploitation of the deposits in Western Siberia, a billion tons of crude oil had been produced there. No other oil-producing region has ever had such rapid rates of assimilation. It seems like a long time since the first barge with Tyumen' crude oil left the mooring at Ust'-Balykskiy. That was in the spring of 1964. At that time the people of Tyumen' had produced only 209,000 tons of Siberia petroleum. Not too many years have passed since then, but the Tyumen' country has really changed! Typical features of the landscape in the oblast are no longer footpaths through the woods, but new cities, workers' settlements, petroleum and gas pipelines, railroads, river ports, plants. . . During this one year alone, our country will receive millions of tons of Tyumen' petroleum and 160 billion cubic meters of gas.

Rates, rates -- how quickly they change the outward appearance and the very map of West Siberia! Among the other names on the map of the territory, there has appeared the settlement of Novyy Urengoy, where currently there are already more than 10,000 inhabitants. By the beginning of the Tenth Five-Year Plan, that settlement did not exist at all. Another remarkable thing is that a future city is being built in the transpolar area by young people who include delegate to the 18th Komsomol Congress Pavel Baryayev. He came here as the head of a shock Komsomol construction detachment bearing the name of that congress. And just a year ago ancient Tyumen' greeted the emissaries of the nationwide shock Komsomol detachment imeni 25-letiya Tseliny [25th Anniversary of the Virginland]. At the summons issued by the party, and following the call of their own hearts, 5000 Komsomol members from all 15 union republics decided to use their own hands to create a petroleum-gas complex in West Siberia. Very soon the railroad, the steel threads of which are stretching out from Surgut, will arrive here at the banks of the

distant Pur. The first phase of the Urengoy-Chelyabinsk is already providing fuel to the country. And so, one more step has been taken to the resolution of the important task of creating a single automated system for the country's gas supply.

During all these recent years of the unprecedented construction in West Siberia, the river workers have been right alongside of the petroleum men and the geologists. They are the ones who delivered to the first drill sites the food supplies, fuel, pipes, and building materials. They are the ones who later carried out the shipments of the first petroleum to the moorings of the Omsk Combine. Following the trail-blazers for the Tyumen' petroleum and gas, the river workers of the Irtysh and the Ob' led their caravans along the Konda and the Salym, the Pur and the Nadym, the Taz and the Kazym. . . . Yes, it would probably be impossible to enumerate all those rivers, large and small, which the Siberian river men have mastered in such a short time and which now are carrying here millions of tons of various kinds of cargo! The river men of the Irtyshskoye Steamship Agency constructed modern mechanized moorings at Mizhnevartovsk and Labytnangi. The river men of the West Siberian Steamship Company have begun to carry out mass shipments along the Vasyugan, the Parabel', the Vaz, and the Chuzik. New moorings are being constructed at Urengoy and Nadym, Sergino and Strezhevoye.

In recent years the river men in the Ob'-Irtysh drainage area have been doing a lot to resolve the main state task -- the carrying of cargoes to the petroleum-gas regions of Tyumenskaya and Tomskaya Oblasts. Work here is no simple matter. The trading posts of this stern land sometimes lack mechanized moorings, crane technology, and working hands. Frequently, it is necessary to adapt the river ships to the complicated ocean-going conditions.

Trial by the North. . . . During the navigation season here, many crews in the Irtysh fleet pass their qualifying examination. And the bravery, knowledge, and experience of the river men are always victorious. The Komsomol and youth crew of the tanker TN-679 during the past navigation season was the initiator of a competition in the drainage area. This ship's collective is headed by a young Communist, Vasilii Timofeyevich Karmanov. During the first trips, the crew delivered tens of thousands of tons of fuel to the moorings at Agan, Trom-Agan, Vakh, Konda, and Nadym. Right here, practically alongside of the Polar Circle, where the petroleum and gas reserves were discovered, settlements, plants, and moorings are being built.

During the past three or four years, heroic trains consisting of eight, and then of ten loaded barges with a total weight of 24,000-27,000 tons have been led through the rivers of West Siberia. The persons who became the pioneers of navigating large-capacity barge trains were Captains M. Listopadov and V. Manakov, who were awarded the high title of laureate of the USSR State Prize. The example set by the innovators was followed

by other crews, including the crew of the OT-2041 from Tobol'sk, where Lenin Komsomol Prizewinner V. Myakishev is the captain. In four years the five-year program was executed by the crews of many ships, including the collectives of the diesel ships OT-2018, Belomorskiy-25, and Morskoy-5, from Omsk, and the ST-780, Alesha Popovich, and RT-193 from Novosibirsk.

High results in labor are being achieved not only by the navigators, but also by the dockers in the West Siberian ports, where, for the purpose of speeding up the cargo flow, wide use is being made of the undertaking suggested by the Leningrad transportation workers. Especially considerable success has been achieved by the port workers in Omsk and Novosibirsk. Brigade leader at the Novosibirsk port Il'ya Yevdokimovich Kladov has been awarded the honorary title of laureate of the USSR State Prize. And although the Siberian winter is at its height, the port workers at Novosibirsk and Omsk are already making plans for the opening of the navigation season. The preparation for the first trips is under way. Construction cargoes, pipes, technology, and equipment are arriving at the port moorings. And, as always, the first consignments of cargoes are for the petroleum men and gas men of West Siberia.

Prior to the opening of the navigation season, the portworkers are loading up dozens of ships, in order to send them out right after the ice. Cargoes are being accumulated in the ports of Tomsk, Tyumen', and Tobol'sk.

During the next navigation season the river workers in the Ob'-Irtys drainage area will have to carry to the petroleum-gas areas considerably more cargo than during the previous years. This work will require of all the river workers in the drainage area the even greater straining of their efforts, will require a creative search and struggle. But they will be victorious. The great program set down by the 25th CPSU Congress for the creation in West Siberia of the principal base for the production of petroleum and gas is being resolved successfully. To a large extent it is to the resolution of these tasks that the decree of the CPSU Central Committee and the USSR Council of Ministers is directed -- the decree entitled "Measures for the Further Economic and Social Development of Regions Inhabited by the Nationalities of the North," in which it is emphasized that the party and the government consider the further development of the economy and culture of those regions to be "an important state task and express the conviction that the party, Soviet, and economic agencies will take all steps to carry out the measures stipulated in this decree."

5075

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OCEAN AND RIVER

CONSTRUCTION OF A SECOND LIGHTER CARRIER

Moscow MORSKOY FLOT in Russian No 1, 1980 p 36

[Article entitled: "The Second Lighter Carrier is in Service"]

[Text] A second lighter carrier of the Yulius Fuchik class, the Tibor Samueli, has joined the fleet of the Soviet Danube shipping company. Both lighter carriers were built at the shipyard of the Finnish firm Wartsila in Helsinki.

Principal Characteristics of the Ship

Length over all	266.5 meters
Length between perpendiculars	222.8 "
Beam	35 "
Height at side	23 "
Maximum draft	11 "
Deadweight	37,850 tons
Gross tonnage	35,817 registered tons

Up to 26 barges of the Danube - Sea class having the dimensions 38 X 11 X 3.9 meters and a cargo capacity of 1070 tons can be transported on the three decks of the ship. The operations of loading the barges on to the ship are carried out by means of the lift at the stern of the ship which is designed for 2700 tons.

Four medium speed Wartsila-Pielstik diesels of the type 16RS2.5 with a total of 36,000 horsepower give the ship a speed of 20 knots.

Strictly speaking, the lighter carrier is a part of the Valmet lighter carrier system which includes within itself tugs for handling barges, its own barges, shipping terminals, and so forth. The firm already has built 4 tugs which will be carried on the lighter carriers as a regular part of the loading equipment.

The international shipping enterprise, Interlikhter, was established in 1978. It was formed by the NRB [The People's Republic of Bulgaria], the VNR [The Hungarian People's Republic], the USSR, and the CSSR. In that same year, the lighter carrier Yulius Fuchik departed on the first operational voyage with Interlikhter cargoes. Because it eliminates transshipments of cargoes, the lighter carrier system has made possible a substantial reduction in the time for delivery of cargoes from Central Europe to India and Pakistan.

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9136

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A NEW SERIES OF SHALLOW-DRAFT TANKERS

Moscow MORSKOY FLOT in Russian No 1, 1980 pp 34-36

[Article by B. Sushkov and V. Sinitskiy of the Administration for Ordering and Supervising Construction of New Vessels of the Ministry of the Maritime Fleet]

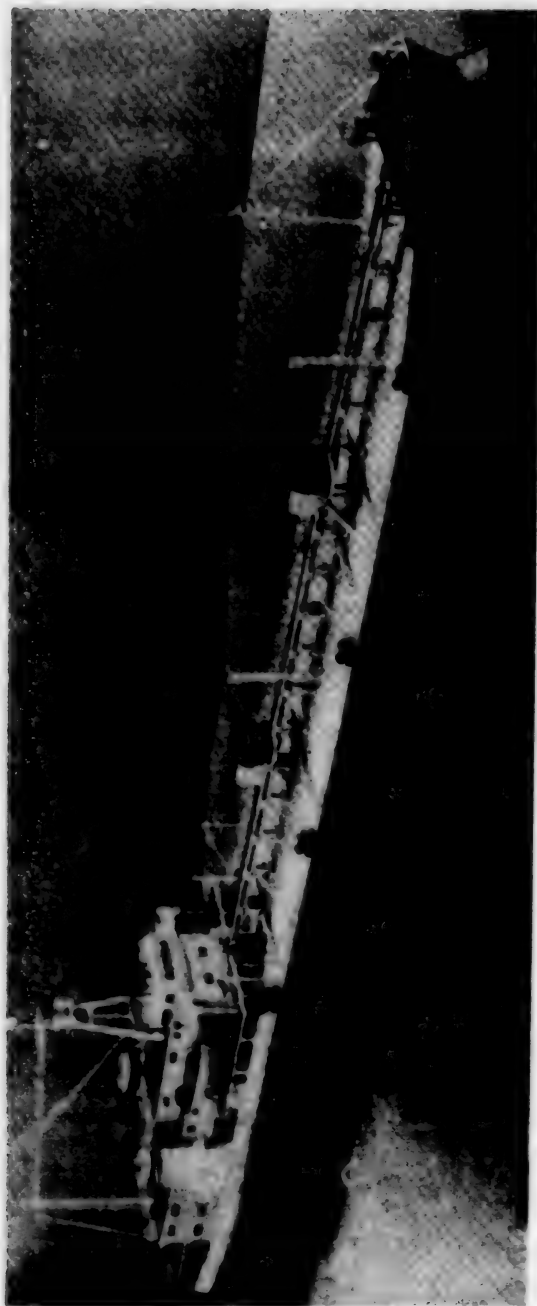
[Text] With the motorship Oleg Koshevoy, the Volgograd shipbuilding plant inaugurates a new series of shallow-draft tankers for year around navigation in the Caspian Sea. They replace shallow-draft tankers built earlier and they will be named for geroi-krasnodontsy [Communist heroes of the Donets Basin?]. The new tanker satisfies the requirements of the international conventions and the operative laws of the USSR relating to seagoing ships. Such ships are constructed to the classification of the Register of the USSR indicated by: [petroleum].

Principal Characteristics of the Ship

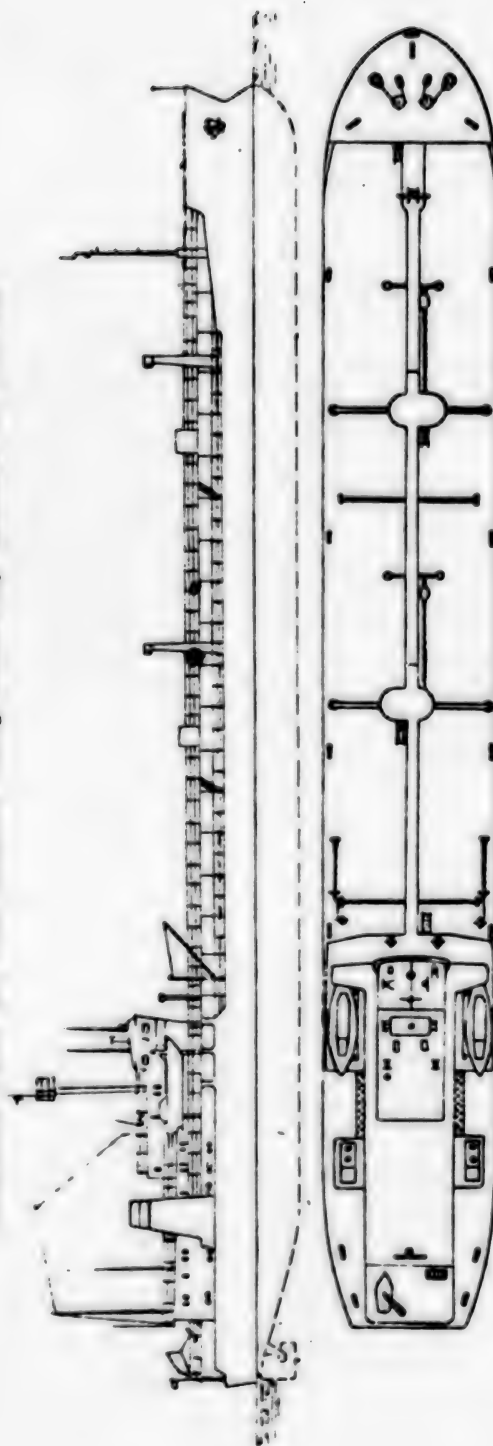
Length over all	125.6 meters
Length between perpendiculars	120.6 "
Beam	16.6 "
Height at side	6.9 "
Draft	4.2 "
Deadweight	5,000 tons
Gross tannage	5,903 cubic meters

The first ship of the series joined the tanker fleet of the Caspian Sea shipping company at the end of 1979.

The ship is intended to transport petroleum and petroleum products of various grades in six cargo tanks, but with the simultaneous loading of them with only one grade. It is a single-deck ship with forecastle and with the main machinery and cargo pump spaces at the stern. Living and working spaces are in the superstructure at the stern.



General View of the Tanker Oleg Koshevoy (Photo of Model)



Outboard Profile and Plan

The hull has an inclined stem, a transom stern, and a double bottom and double sides in way of the cargo tanks to prevent the loss of cargo because of possible damage to the outer shell and consequently, to reduce the threat of polluting the sea with oil. The smooth, unframed sides and bottoms inside the tanks speed up cargo and cleaning operations. The double sides and bottom also facilitate the retention of the temperature of viscous petroleum products which are heated in the tanks during transport and unloading.

The unsinkability of the ship is assured with any single compartment flooded and with the ship fully loaded or in ballast, and its stability satisfies the requirements of the Register of the USSR. The speed of the ship in deep water and loaded to a draft of 4 meters is about 12 knots. The tanker is fitted with bilge keels to reduce rolling and with a controllable pitch bow thruster to improve maneuverability and to facilitate docking operations. This installation has a thrust of about 1,700 kilograms and is controlled remotely from stations at the sides of the ship.

The main power plant consists of two shafts driven by two diesel engine and reduction gear units of the 64RPN 36/45 type. The nominal power of each unit is 1,500 horse power at 252 RPM. All necessary auxiliary machinery and heat exchangers are provided and also an emergency diesel generator.

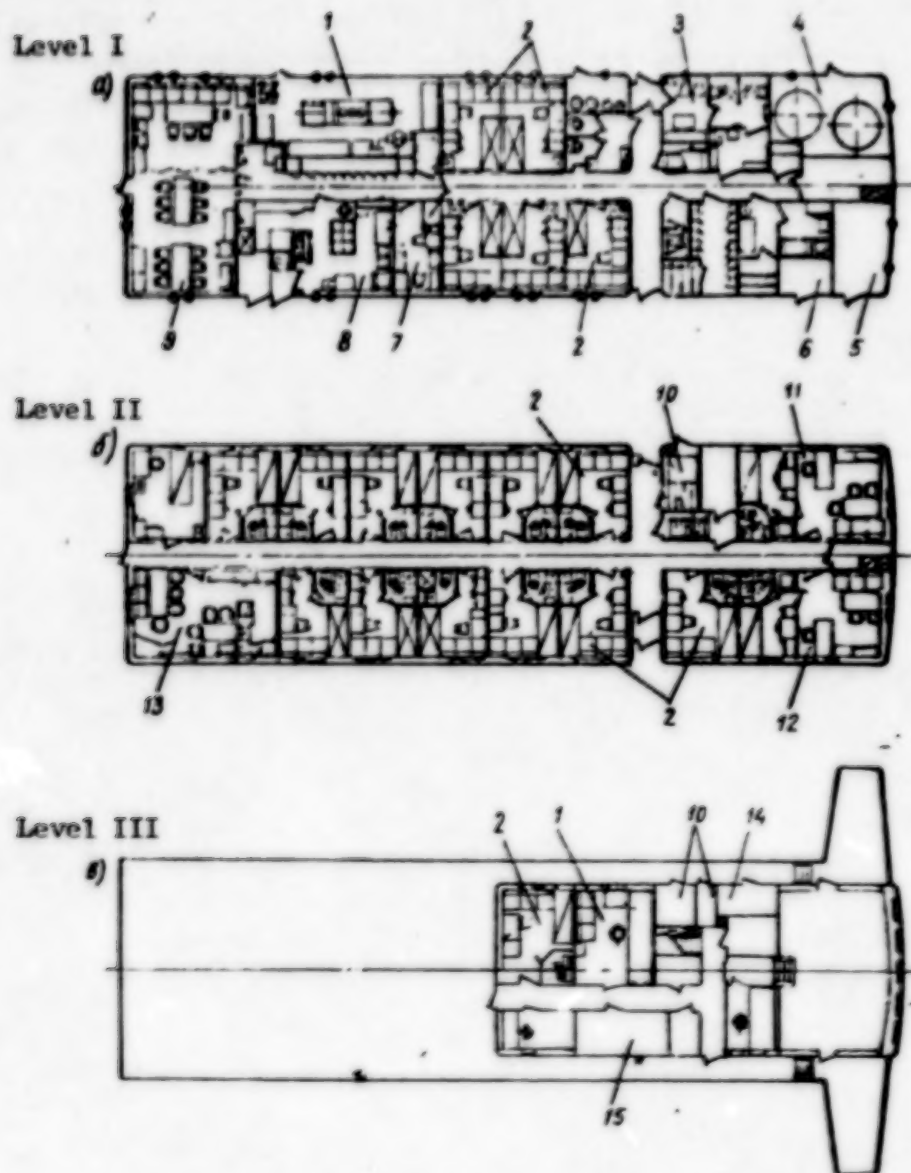
The electrical power plant consists of four, 150 kilowatt, DGR 150/750 diesel generators.

The boiler installation consists of two, 1.6 ton per hour, automated, KAV 1.6/7 boiler units and also a waste-heat steam boiler working off the main engine exhaust gases.

The tanker's cargo system is served by two centrifugal pumps each delivering 850 cubic meters per hour. A piston pump delivering 65 cubic meters per hour is provided for cleaning tanks after unloading. A hot-fluid system for heating the cargo is used on the ship to assure normal operation of the pumps when discharging viscous petroleum products. Control of the temperature of petroleum products in the tanks is accomplished remotely from the station for control of cargo operations.

The cargo piping system permits the simultaneous discharge of cargo by two pumps with a total delivery of up to 1,000 cubic meters per hour for light petroleum products and not less than 650 cubic meters per hour for heavy ones. Starting and stopping of the pumps is done at the cargo handling control station.

The ship is equipped with an automated system for control of the machinery installation underway without a continuous watch in the engine room, and for maintenance without a watch while at anchor. Underway monitoring of the operation of the machinery is provided by one watch engineer at a TsPU [central control post]. A panel installed in the wheelhouse is equipped



General Arrangement of Levels I - III

1. Emergency diesel generator compartment. 2. Cabins. 3. Smoking lounge. 4. Foam fire extinguishing station. 5. Cargo control room. 6. Emergency equipment stowage. 7. Office. 8. Galley. 9. Crew's mess. 10. Batteries. 11. Chief engineer's cabin. 12. Captain's cabin. 13. Wardroom. 14. Radio shack. 15. Agregatnaya [Compartment for power-supply sets for radio and navigation equipment?]

with indicators and the necessary devices for remote, automated control (DAU) of the main engines.

The DAU system for the engines permits carrying out automatically all of the operations in starting, reversing, changing speed, putting another engine into operation, and stopping. At the same time, control of the main engines which is independent of the DAU is provided at the central control post. An emergency light and sound signalling system is installed at the central control post and in the wheelhouse to warn about any disruption of the operating conditions of the main engines.

The diesel generators and other mechanisms also are equipped with systems of automatic control and signalling. In connection with the servicing of the machinery spaces without a watch when at anchor, there are general signal displays in the cabins of the engineers and electricians and also in the reading room, the officer's wardroom, and the mess hall.

The ship has modern communication and radio navigation equipment.

The cabins on the tanker are for single or double occupancy with private sanitary facilities, and the captain and the chief engineer have compartments with bedroom and a study.

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9736

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